Citrato Ascorbato di Potassio - Con Lisozima
di Giancarlo Luzzi

Tale integratore Alimentare si pone il fine di fornire le principali molecole base per il ripristino cellulare e per un rinforzo basilare contro agenti infettivi e tossiemici con attenzione ad eventuali polimorfismi.
La coagulazione del sangue sembra svolgere un ruolo importante nella comparsa del cancro ed i suoi effetti possono essere molteplici sopratutto nei pazienti con cancro (1) ed in molte altre malattie degenerative. E' noto inoltre da tempo l'effetto dei **citrati** sulla coagulazione del sangue (2). E' usato da sempre come anticoagulante (3).
Thomas Riddick (4) nel suo "Control of Colloid Stability Through Zeta Potential" (5) ne ribadiva l'importanza. I citrati sono ottimi alleati anche contro calcificazioni di reni (6,7), aorta (8) e carcinomi (9,10,11). Inoltre la letteratura suggerisce che l'integrazione di citrato può essere utile nella gestione del diabete e delle sue complicanze quali ad esempio la cataratta (12).
Il citrato è anche una delle molecole di cui le ossa sono costuituite (13) e circa 1/6 della superficie dei cristalli di apatite ossea è coperta da molecole di citrato, che hanno un effetto stabilizzante.
E' noto che le cellule sane sono piene di **potassio** mentre quelle malate sono cariche di sodio (14). Si ipotizza un danno al cofattore K (pompa Na/K) per fori o increspature facendo fuoriuscire il K e facendo entrare il Na, dannoso per il nucleo. L'RDA di Potassio è stato da poco portato a 3,5g al giorno dall'OMS. Una integrazione di potassio genera molti benefici regolarizzando la pressione (15...20), regolando la glicemia nel sangue (21...23), combatte la ritenzione idrica (24…26), aumenta la densità ossea(27…30), abbassa il rischio di calcoli renali(31…33), è importante per la contrazione muscolare(34), abbassa il rischio di Ictus (35,36), è cofattore degli enzimi cruciali l'ATPasi (37) - che utilizza l'ATP per rilascio energia) - ed il piruvato chinasi (38) - per il metabolismo del glucosio - ed abbassa i rischi cardiovascolari (39).
Il **magnesio** (altro elemento ricco nel citoplasma) è notoriamente benefico per la salute (40,41) anche per diabetici (42).
L'acido ascorbico, è la molecola base per la sintesi di collagene ed il ripristino della parete cellulare. Una integrazione di Acido ascorbico (potente antiossidante in dosi basse), magnesio e potassio, pertanto si ipotizza ripristini la membrana cellulare, integri ioni di K e Mg e riattivi la pompa Na/K. L'emivita dell'acido ascorbico è di circa 3,5 ore mentre in forma di ascorbato è di circa 10 ore. La Fondazione Pantellini promuove e raccoglie gli studi sull'ascorbato di potassio (43).
L'eziopatogenesi di molte malattie è stata associata ad agenti patogeni quali micobatteri tipici e non. Hanno anche un forte impatto sulla salute germi quali Clostridi (presenti in miele, carni e formaggi che causano tossinfezioni croniche con implicazioni in coliti e le neurotossine emesse dalla sporulazione di questi causano cardiopatie, neuropatie, dolori cervicali e reumatologici ed articolari) e Borrelia. Questi tre agenti patogeni sono implicati in molte sindromi che spaziano parecchio. Le tossine aggravano la risposta immunitaria e facilitano (booster) parecchie infezioni. L'acido ascorbico, il magnesio ed il potassio inoltre legano alcuni i metalli pesanti con un effetto chelante.
Il **Lisozima** è innocuo per i lattobacilli (con cui coesiste nel latte materno) ed è stato testato come completamente atossico nell'adulto fino a 7 grammi/die e non genera farmacoresistenze. E' consigliato affiancarlo appunto ad alcalinizzanti (44) per evitare sporulazione di batteri fungosi come micobatteri e clostridi o polimorfismo in batteri L-Form o CWD (Cell Wall Deficent). In caso di infezioni "latenti" da micobatteri ne è utile una integrazione in quanto vi può esserci un deficit (45).

Dal sito Di Bella *"Il lisozima trova frequente indicazione per le sue capacità batteriolitiche e per l'attivazione dell'immunità naturale, di cui è un costituente. È documentato il suo ruolo nella resistenza alle flogosi batteriche e virali e la sua carenza è spesso associata a fragilità degli epiteli aerodigestivi superiori e alla frequenza ed intensità di recidive. Anche se non ha una rilevante efficacia antitumorale diretta, può agire attivando macrofagi e cellule immunitarie e l'immunogenecità delle popolazioni neoplastiche. Attraverso la lisi di cellule batteriche e virali, può liberare molecole ad attività immunitaria e antitumorale. L'azione del lisozima si estende alla flora patogena protozoaria, raggiungendo un ampio spettro terapeutico esteso alle patologie gastrointestinali e del cavo orale. Potenzia decisamente l'effetto antibatterico degli antibiotici, che a seconda delle condizioni può sostituire o integrare, limitando notevolmente il deficit immunitario spesso associato alla patologia neoplastica e aggravato dai trattamenti chemioterapici. La sua assenza di tossicità, in quanto molecola biologica, e l'efficacia ne consigliano un uso frequente e soprattutto nelle situazioni conclamate di immunodepressione neoplastica."*

References:

1 - Panoramica dei meccanismi postulati che collegano il cancro e la trombosi.
Overview of the postulated mechanisms linking cancer and thrombosis.
ten Cate H [1] , Falanga A .
https://www.ncbi.nlm.nih.gov/pubmed/19176985
2 - EFFETTI DEL CITRATO DI SODIO SULLA COAGULAZIONE DEL SANGUE
EFFECTS OF SODIUM CITRATE ON BLOOD COAGULATION
Richard Lewisohn – 1922
http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1400199/
3 - Automatic platelets numbering with citrate as anticoagulant: is the result valid?.
Védy S[1], Boom B, Perez P, Schillinger S, Ragot C, Bakkouch S, Puyhardy JM.
http://www.ncbi.nlm.nih.gov/pubmed/21896411
4 - La storia di Zeta Potential 3
The Story of Zeta Potential 3
http://www.biomedx.com/zeta/page4.html
5 - Controllo della stabilità colloidale attraverso il potenziale di Zeta : con un capitolo conclusivo sulla sua relazione con la malattia cardiovascolare
Control of Colloid Stability Through Zeta Potential:With a Closing Chapter on Its Relationship to Cardiovascular Disease, Volume 1
Thomas M. Riddick - Zeta-Meter, Incorporated, 1968
http://books.google.it/books/about/Control_of_Colloid_Stability_Through_Zet.html?id=6KQsAQAAMAAJ&redir_esc=y
6 - Calcificazione corticale renale in ratti singenici intatti e in quelli che ricevono un innesto aortico toracico infrarenale: possibili ruoli eziologici di endotelina, nitrato e minerali e diversi effetti preventivi del trattamento orale a lungo termine con magnesio, citrato e preparati contenenti alcali.
Renal cortical calcification in syngeneic intact rats and those receiving an infrarenal thoracic aortic graft: possible etiological roles of endothelin, nitrate and minerals, and different preventive effects of long-term oral treatment with magnesium, citrate and alkali-containing preparations.
Schmiedl A, Schmiedl PO, Bonucci E, Seitz T, Schwille RM, Manoharan M.
http://www.ncbi.nlm.nih.gov/pubmed/11585277
7 - Valore dello studio metabolico di pazienti che presentano calculosi renale di calcificazioni. Nota sull'effetto metabolico di eparina e citrato di sodio
[Value of the metabolic study of patients presenting renal calculosis of calcifications. Note on the metabolic effect of heparin and sodium citrate].
VERBANCK M, TOPPET N, KAHN R.
http://www.ncbi.nlm.nih.gov/pubmed/13841726
8 - Studi sulla riduzione della calcificazione aortica da parte dei citrati alcalini in una preparazione di tessuto ex vivo nel ratto.
Studies on the reduction of aortic calcification by alkali citrates in an ex vivo tissue preparation in the rat.
Schick CH[1], Schwille PO.
http://www.ncbi.nlm.nih.gov/pubmed/8216437
9 - Inibizione della crescita del carcinoma polmonare: il Knockdown della citasi ATP e il trattamento con statine portano al doppio blocco della chinasi proteica mitogenica attivata (MAPK) e fosfatidilinositolo-3-chinasi (PI3K) / AKT
Inhibition of Lung Cancer Growth: ATP Citrate Lyase Knockdown and Statin Treatment Leads to Dual Blockade of Mitogen-Activated Protein Kinase (MAPK) and Phosphatidylinositol-3-Kinase (PI3K)/AKT Pathways
JUN-ICHI HANAI, NATHANIEL DORO, ATSUO T. SASAKI, SUSUMU KOBAYASHI,LEWIS C. CANTLEY, PANKAJ SETH, and VIKAS P. SUKHATME
http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3407542/
10 - Effetto del citrato sulle cellule del mesotelioma pleurico maligno: un effetto sinergico con il cisplatino.
Effect of citrate on malignant pleural mesothelioma cells: a synergistic effect with cisplatin.
Zhang X, Varin E, Allouche S, Lu Y, Poulain L, Icard P.
http://www.ncbi.nlm.nih.gov/pubmed/19414371
11 - L'effetto del citrato di sodio sulla crescita dei tumori trapiantabili
The effect of sodium citrate on the growth of transplantable tumors.
Prizhivoit GN.
http://www.ncbi.nlm.nih.gov/pubmed/5002347
12 - L'acido citrico inibisce lo sviluppo di cataratta, proteinuria e chetosi nei ratti diabetici di streptozotocina (tipo 1)
Citric acid inhibits development of cataracts, proteinuria and ketosis in streptozotocin (type1) diabetic rats
Ryoji Nagai, Mime Nagai, Satoko Shimasaki, John W. Baynes, and Yukio Fujiwara
https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2917331/
13 - Il citrato fortemente legato stabilizza i nanocristalli di apatite nell'osso
Strongly bound citrate stabilizes the apatite nanocrystals in bone
Y.-Y. Hu, A. Rawal, and K. Schmidt-Rohr
http://www.pnas.org/content/107/52/22425
14 – 1932 - Morawek e Kishi.
"Comunicato Andromeda" n.6/1991 alle pp. 111 e segg.
15 - Sensibilità al sale e ipertensione: un cambio di paradigma da disfunzione renale a disfunzione endoteliale vascolare

Salt Sensitivity and Hypertension: A Paradigm Shift from Kidney Malfunction to Vascular Endothelial Dysfunction
Hoon Young Choi, M.D., Hyeong Cheon Park, M.D., and Sung Kyu Ha, M.D.
https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4520886/
16 - Dovremmo mangiare più potassio per controllare meglio la pressione sanguigna nell'ipertensione?
Should we eat more potassium to better control blood pressure in hypertension?
Burnier M[1].
https://www.ncbi.nlm.nih.gov/pubmed/29301002
17 - L'effetto della supplementazione di potassio sulla pressione sanguigna nei soggetti ipertesi: una revisione sistematica e una meta-analisi.
The effect of potassium supplementation on blood pressure in hypertensive subjects: A systematic review and meta-analysis.
Filippini T, Violi F, D'Amico R, Vinceti M
https://www.ncbi.nlm.nih.gov/pubmed/28024910
18 - Sodium-to-Potassium Ratio and Blood Pressure, Hypertension, and Related Factors[1,2]
Vanessa Perez,* and Ellen T. Chang
https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4224208/
19 - Role of potassium in regulating blood flow and blood pressure
Haddy FJ[1], Vanhoutte PM, Feletou M.
https://www.ncbi.nlm.nih.gov/pubmed/16467502
20 - The relationship between sodium excretion and blood pressure, urine albumin, central retinal arteriolar equivalent
Feng Huang, Peng Yu, Yin Yuan, Qiaowei Li, Fan Lin, Zhonghai Gao, Falin Chen, Pengli Zhu
https://bmccardiovascdisord.biomedcentral.com/articles/10.1186/s12872-016-0369-1
21 – Potassium and risk of Type 2 diabetes
Ranee Chatterjee,Hsin-Chieh Yeh , David Edelman , Frederick Brancati
https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3197792/
22 – Potassium Measures and Their Associations with Glucose and Diabetes Risk: The Multi-Ethnic Study of Atherosclerosis (MESA)
Ranee Chatterjee , Leila Zelnick, Kenneth J. Mukamal, Jennifer A. Nettleton, Bryan R. Kestenbaum, David S. Siscovick, Joachim H. Ix, Russell Tracy, Andrew N. Hoofnagle, Laura P. Svetkey, David Edelman, Ian H. de Boer
https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0157252
23 – Potassium measurements and risk of type 2 diabetes: a dose-response meta-analysis of prospective cohort studie
Yang Peng, Guo-Chao Zhong, Qiao Mi, Kejia Li, Ao Wang, Ling Li, Hua Liu, and Gangyi Yang1
https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5725047/
24 – L'importanza dell'equilibrio dei fluidi nella pratica clinica.
Bilance K , Pilsworth J .
https://www.ncbi.nlm.nih.gov/pubmed/18777823
25 – Too much of a good thing?
The danger of water intoxication in endurance sports
Angus H N Whitfield
https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1872071/
26 - On the mechanism of the effects of potassium restriction on blood pressure and renal sodium retention.
Gallen IW1, Rosa RM, Esparaz DY, Young JB, Robertson GL, Batlle D, Epstein FH, Landsberg L.
https://www.ncbi.nlm.nih.gov/pubmed/9428447
27 - Effetto del citrato di potassio sulla densità ossea, la microarchitettura e il rischio di fratture negli anziani sani senza osteoporosi: uno studio randomizzato controllato.
Jehle S 1 , Hulter HN , Krapf R .
https://www.ncbi.nlm.nih.gov/pubmed/23162100
28 - Potassium citrate prevents increased urine calcium excretion and bone resorption induced by a high sodium chloride diet.
Sellmeyer DE1, Schloetter M, Sebastian A.
https://www.ncbi.nlm.nih.gov/pubmed/11994333
29 – The role of nutrients in bone health, from A to Z.
Palacios C1.
https://www.ncbi.nlm.nih.gov/pubmed/17092827
30 – Dietary influences on bone mass and bone metabolism: further evidence of a positive link between fruit and vegetable consumption and bone health?
Susan A New, Simon P Robins, Marion K Campbell, James C Martin, Mark J Garton, Caroline Bolton-Smith, David A Grubb, Sue J Lee, David M Reid
https://academic.oup.com/ajcn/article/71/1/142/4729315
31 – Urinary citrate and renal stone disease: the preventive role of alkali citrate treatment.
Caudarella R1, Vescini F.
https://www.ncbi.nlm.nih.gov/pubmed/19911682
32 – Dietary Protein and Potassium, Diet-Dependent Net Acid Load, and Risk of Incident Kidney Stones.Ferraro PM1, Mandel EI, Curhan GC, Gambaro G, Taylor EN
https://www.ncbi.nlm.nih.gov/pubmed/27445166
33 – Medical and Dietary Therapy for Kidney Stone Prevention
Zeynep Gul and Manoj Monga
https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4265710/
34 – Quantification of Na+,K+ pumps and their transport rate in skeletal muscle: Functional significance
Torben Clausen
https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3787770/
35 – Serum Potassium Is Positively Associated With Stroke and Mortality in the Large, Population-Based Malmö Preventive Project Cohort
Linda S. Johnson, MD, PhD; Nick Mattsson, MD; Ahmad Sajadieh, MD, DMSc; Per Wollmer, MD, PhD; Martin Söderholm, MD, PhD
https://www.ahajournals.org/doi/pdf/10.1161/STROKEAHA.117.018148
36 – Dietary sodium, sodium-to-potassium ratio, and risk of stroke: A systematic review and nonlinear dose-response meta-analysis.
Jayedi A, Ghomashi F, Zargar MS, Shab-Bidar S.
https://www.ncbi.nlm.nih.gov/pubmed/29907351
37 – Mechanism of potassium ion uptake by the Na+/K+-ATPase
Juan P. Castillo, Huan Rui, Daniel Basilio, Avisek Das, Benoît Roux, Ramon Latorre, Francisco Bezanilla & Miguel Holmgren
https://www.nature.com/articles/ncomms8622
38 – The effect of potassium concentration on glycolysis and pyruvate kinase in high potassium and low potassium possum erythrocytes
E. OgawaM. L. BakerN. S. Agar
https://link.springer.com/article/10.1007/BF02600372
39 – Dietary potassium regulates vascular calcification and arterial stiffness
Yong Sun, Chang Hyun Byon, Youfeng Yang, Wayne E. Bradley, Louis J. Dell'Italia, Paul W. Sanders, Anupam Agarwal, Hui Wu, and Yabing Chen
https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5841863/
40 – Magnesium in Prevention and Therapy.
Gröber U , Schmidt J , Kisters K
https://www.ncbi.nlm.nih.gov/pubmed/26404370

41 - Alimenti funzionali come potenziali opzioni terapeutiche per la sindrome metabolica.
Functional foods as potential therapeutic options for metabolic syndrome.
Brown L, Poudyal H, Panchal SK
https://www.ncbi.nlm.nih.gov/pubmed/26345360
42 – Magnesium and type 2 diabetes
Mario Barbagallo and Ligia J Dominguez
https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4549665/
43 – Raccolta Pubblicazioni Ascorbato Potassio
http://www.pantellini.org/it/studi
44 – Lysis of Mycoplasma, Bacterial Protoplasts, Spheroplasts and L-forms by Various Agents
S. Razin and M. Argaman
https://www.microbiologyresearch.org/content/journal/micro/10.1099/00221287-30-1-155?fbclid=IwAR3VBR0DBJuYOoVK0MlM1dhj2p3X4ppjcq8hRdibrtTVHf-I-fiMvHgZpn0
45 - La lipoproteina LprI del *Mycobacterium tuberculosis* agisce come inibitore del lisozima *
Lipoprotein LprI of *Mycobacterium tuberculosis* Acts as a Lysozyme Inhibitor*
Deepti Sethi, Sahil Mahajan, Chaahat Singh, Amrita Lama, Mangesh Dattu Hade, Pawan Gupta, and Kanak L. Dikshit
https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4742756/

Ulteriori Riferimenti Sui Lisozimi

Airoldi M, Pecchio F, Albanese F, Mastromatteo V, Gariboldi A, Di Costanzo G, Fazio M. [Urinary lysozyme, beta microglobulin, and alpha-glucosidase during cisplatin therapy]. Boll Soc Ital Biol Sper. 1983 Mar 30;59(3):392-8.
Alsabti E. The prognostic value of serum lysozyme activity in acute myelogenous leukemia. Med Pediatr Oncol. 1979;6(3):189-93.
Altamar-Rios J. [Lysozyme in the treatment of juvenile laryngeal papillomatosis. A new concept in its etiopathogenesis]. An Otorrinolaringol Ibero Am. 1990;17(5):495-504.
Armstrong TD, Clements VK, Ostrand-Rosenberg S. Class II-transfected tumor cells directly present endogenous antigen to CD4+ T cells in vitro and are APCs for tumor-encoded antigens in vivo. J Immunother. 1998 May;21(3):218-24.
Arrese J, Paquet P, Claessens N, Pierard-Franchimont C, Pierard G. Dermal dendritic cells in anogenital warty lesions unresponsive to an immune-response modifier. J Cutan Pathol. 2001 Mar;28(3):131-4.
Astrom M, Bodin L, Hornsten P, Wahlin A, Tidefelt U. Evidence for a bimodal relation between serum lysozyme and prognosis in 232 patients with acute myeloid leukaemia. Eur J Haematol. 2003 Jan;70(1):26-33.
Beeguer J, Casutt M, Stiksa E, Vassilakos P, Voegeli H. [Treatment of condylomata of the cervix uteri with local administration of lysozyme]. Schweiz Rundsch Med Prax. 1985 Nov 26;74(48):1337-9.
Bianchi C. Is Fleming's lysozyme an analgesic agent? An experimental reappraisal of clinical data. Eur J Pharmacol. 1981 May 8;71(2-3):211-21.
Bianchi C. Thrombocytopenia provoked by carrageenan in rabbits and the inhibitory effect of lysozyme. Agents Actions. 1982 Dec;12(5-6):657-61.
Bjermer L, Back O, Roos G, Thunell M. Mast cells and lysozyme positive macrophages in bronchoalveolar lavage from patients with sarcoidosis. Valuable prognostic and activity marking parameters of disease? Acta Med Scand. 1986;220(2):161-6.
Bosi A, Borsotti M, Ghelli P, Tozzi P, Bellesi G, Rossi Ferrini P. Serum angiotensin-I-converting enzyme and lysozyme levels in untreated and unsplenectomized patients with Hodgkin's disease. Acta Haematol. 1984;71(5):329-33.
Bratlid D, Moe PJ. Serum lysozyme activity in children with acute leukemia. Eur J Pediatr. 1978 Apr 20;127(4):263-8.
Bregant F, Ceschia V, Pacor S, Sava G. Reduction of MCa mammary carcinoma in mice fed with egg-white lysozyme.Pharmacol Res. 1990 Sep-Oct;22 Suppl 3:95-6.
Bukharin 0V, Zykova LS, Tarasenko NF. Experimental and clinical study of the use of lysozyme in combination with chemotherapeutic agents. Antibiot Med Biotekhnol 1986; 31(12): 917-20.
Burman LG, Lundblad G, Camner P, Fange R, Soder P. Lysozyme - an enzyme of both historical and curreni interest as a therapeutical agent. Lakartidningen 1991; 88 (44): 3665-8.
Cavicchini S. [Use of high-dose lysozyme in the treatment of herpes zoster and flat warts]. Minerva Med. 1984 Mar 10;75(9-10):457-62.
Cheuk W, Walford N, Lou J, Lee AK, Fung CF, Au KH, Mak LS, Chan JK. Primary histiocytic lymphoma of the central nervous system: a neoplasm frequently overshadowed by a prominent inflammatory component. Am J Surg Pathol. 2001 Nov;25(11):1372-9.
Das S, Banerjee S, Gupta JD. Burman LG, Lundblad G, Camner P, Fange R, Lundborg M, Soder P. [Lysozyme--an enzyme of both historical and current interest as a therapeutical agent]. Lakartidningen. 1991 Oct 30;88(44):3665-8.
De Vita O, Bondi A, Euse-Bi V, Bordi C. Simultaneous polypoid tumors of the stomach and duodenum with composite cell population (mucous, argyrophil, and lysozyme-containing cells): a case report. Am J Gastroenterol. 1984 Aug;79(8):606-10.
Di Luzio NR. Lysozyme activity: an index of macrophage functional status. Front Biol. 1979;48:447-62.
Dick W, Dopfer R. [Serum lysozyme level in children with acute leukemia and malignant diseases]. Padiatr Padol. 1985;20(1):25-32.
Dick W, Schwandner G. [Clinical significance of lysozymes in colorectal tumors]. MMW Munch Med Wochenschr. 1982 Jun 25;124(25):619-20.
Dick W. [Lysozyme: basic facts and diagnostic importance]. Fortschr Med. 1982 Jul 8;100(26):1230-4.
Enzelsberger H, Metka M, Salzer H. [Effect of a parenteral ozone-oxygen mixture on the concentration of immunoglobulins (IgA, IgG, IgM), of vitamin A and lysozyme activity in patients with cervical cancer]. Geburtshilfe Frauenheilkd. 1987 Dec;47(12):343-5.
Ferry JA, Srigley JR, Young RH. Granulocytic sarcoma of the testis: a report of two cases of a neoplasm prone to misinterpretation. Mod Pathol. 1997 Apr;10(4):320-5.
Fois AM, Pourquier M, Bouisson AM. [Salivary pH and lysozyme during oropharyngeal radiotherapy]. J Biol Buccale. 1990 Sep;18(3):169-75.
Fukawa K, Nishimura N, Irino O, Nakazato K, Taguchi A, Nitta K. Experimental studies on antitumor effects of lysozyme. Gan To Kagaku Ryoho 1982; 9 (5): 9 15-23.
Fukuda T, Tominaga K, Abe M, Kusakabe T, Yamaki T, Hiraki H, Itoh S, Suzuki T. Characterization of a newly established human acinic cell adenocarcinoma cell line (HACC) originating from the salivary gland: morphological features and role of various growth factors on the growth of the HACC cell line. Pathol Int. 1998 Oct;48(10):791-9.
Gorecka-Tisera A, Proctor JW, Yamamura Y, Harnaha J, Meinert K. Dose, route, and time dependence of serum lysozyme and antitumor activity following administration of glucan, Corynebacterium parvum, pyran, or lipopolysaccharide to mice. J Natl Cancer Inst. 1981 Oct;67(4):911-5.
Inouye K. [The effects of lysozyme chloride on the immune response of patients with head and neck cancer]. Gan No Rinsho. 1987 Jun;33(6):627-32.
Jung SM, Kuo TT, Wu JH, Shih LY. Granulocytic sarcoma presenting as a giant breast tumor in a pregnant woman: a case report. Changgeng Yi Xue Za Zhi. 1998 Mar;21(1):97-102.
Karle H, Hansen NE, Plesner T. Neutrophil defect in multiple myeloma. Studies on intraneutrophilic lysozyme in multiple myeloma and malignant lymphoma. Scand J Haematol. 1976 Jul;17(1):62-70.
Kemona H, Wysocka J, Prokopowicz J, Kiluk S. NBT test and serum lysozyme activity during remission of Hodgkin's disease. Acta Med Pol. 1986;27(3-4):163-9.
Kim EH, Lee JC, Kim J, Son YO, Chung GH, Jang YS. Modulation of antigen-specific immune responses by the oral administration of a traditional medicine, bo-yang-hwan-o-tang. Immunopharmacol Immunotoxicol. 2002 Aug;24(3):423-40.
Lieberman R, Fudenberg HH. Effects of BCG on lysozyme and “active” T cells in patients with malignant melanoma: a preliminary study. Clin Immunol Immunopathol. 1979 Feb;12(2):191-203.

Liso V, Laricchia R. [Prognostic usefulness of lysozyme in acute myelomonocytic leukemias]. Minerva Med. 1983 Jun 30;74(27):1595-600.
Mantur M, Matowicka-Karna J, Darewicz B, Kemona H, Dymicka-Piekarska V, Prokopowicz J, Darewicz. Embolization and serum lysozyme activity in renal cancer. Neoplasma. 1998;45(3):148-50.
Martynova VA, Tolkacheva TV, Abakumov EM, Golosova TV. [Immunoglobulin and lysozyme content in the intestines during correction of the dysbacteriosis of acute leukemia patients]. Vopr Onkol. 1981;27(7):39-43.
Mendiondo O, Suit H, Fixler H. Lysozyme levels and macrophage content of tumor tissue in C3H mice bearing fibrosarcoma transplants treated by radiation and Corynebacterium parvum. Int J Radiat Oncol Biol Phys. 1978 Sep-Oct;4(9-10):829-34.
Meurman JH, Laine P, Keinanen S, Pyrhonen S, Teerenhovi L, Lindqvist C. Five-year follow-up of saliva in patients treated for lymphomas. Oral Surg Oral Med Oral Pathol Oral Radiol Endod. 1997 Apr;83(4):447-52.
Nawrocka E. [Lysozyme in good health and in disease]. Pediatr Pol. 1978 Nov;53(11):1321-5.
Neretto G, Agricola R, Giovanelli E, Poccardi G, Pellerito R, Furno F, Martinetto P, Pellegrino S, Daglio C, Tondolo M. [Evaluation of the serum lysozyme level as a further parameter for predicting hematological tolerance in patients treated with cytostatic chemotherapy. Study of 134 cases]. Recenti Prog Med. 1980 Oct;69(4):431-57.
Neretto G, Giovanelli E, Agricola R, Pellegrino S, Bruno F, Mangione M, Furno F. [Lysozyme and cytostatic therapy]. Clin Ter. 1978 Dec 15;87(5):465-73.
Pacor S, Giacomello E, Bergamo A, Clerici K, Zacchigna M, Boccu E, Sava G. Antimestatic action and lymphocyte activation by the modified lysozyme mPEG-Lyso in mice with Mca mammary carcinoma. Anticancer Res 1996; 16 (5A): 2559-64.
Pajari U, Poikonen K, Larmas M, Lanning M. Salivary immunoglobulins, lysozyme, pH, and microbial counts in children receiving anti-neoplastic therapy. Scand J Dent Res. 1989 Apr;97(2):171-7.
Pellerito R, Agricola R, Giovanelli E, Neretto G. [Blood lysozyme level and bone marrow granulocyte reserve]. Arch Sci Med (Torino). 1978 Oct-Dec;135(4):485-92.
Proctor VA, Cunningham FE. The chemistry of lysozyme and its use as a food preservative and a pharmaceutical. Crit Rev Food Sci Nutr. 1988;26(4):359-95.
Prokopowicz J, Merkiel K, Korenkiewicz A, Kiluk S. Serum lysozyme activity in patients with breast cancer treated by mastectomy and radiation. Neoplasma. 1984;31(4):491-6.
Qi L, Rojas JM, Ostrand-Rosenberg S. Tumor cells present MHC class II-restricted nuclear and mitochondrial antigens and are the predominant antigen presenting cells in vivo. J Immunol. 2000 Nov 15;165(10):5451-61.
Sakai M, Okada M, Maruyama S, Yoshida S, Yamashita T, Takahashi K. [Combination chemotherapy with bleomycin ointment and lysozyme ointment against mouse WHT squamous cell carcinoma]. Gan To Kagaku Ryoho. 1990 Jan;17(1):103-7.
Sava G, Benetti A, Ceschia V, Pacor S. Lysozyme and cancer: role of exogenous lysozyme as anticancer agent. Anticancer Res 1989; 9 (3): 583-91.
Sava G, Ceschia V, Pacor S, Zorzet S, Perissin L. Antineoplastic action of egg-white lysozyme on the growth of MCa mammary carcinoma and TLX5 lymphoma in the CBA mouse. Methods Find Exp Clin Pharmacol. 1989 Nov;11(11):683-9.
Sava G, Ceschia V, Pacor S. Mechanism of the antineoplastic action of lysozyme: evidence for host mediated effects. Anticancer Res 1989; 9 (4): 1175-80.
Sava G, Ceschia V, Zabucchi G. Evidence for host-mediated antitumor effects of lysozyme in mice bearing the MCa mammary carcinoma. Eur J Cancer Clin Oncol. 1988 Nov;24(11):1737-43.
Sava G, Pacor S, Dasic G, Bergamo A. Lysozyme stimulates lymphocyte response to ConA and IL-2 and potentiates 5-fluorouracil action on advanced carcinomas.Anticancer Res. 1995 Sep-Oct;15(5B):1883-8.
Sava G, Pacor S, Nardon E, Dobrina A. Effects of endotoxin in mice bearing solid metastasizing tumors and treated with lysozyme hydrochloride. J Chemother. 1992 Aug;4(4):228-34.
Sava G, Perissin L, Zorzet S, Callerio C. Antineoplastic effects of egg-white lysozyme in mice bearing solid metastasizing tumors. Anticancer Res. 1986 Mar-Apr;6(2):183-6.
Sava G, Perissin L, Zorzet S. Antimetastatic action of orally administered lysozyme in mice bearing Lewis lung carcinoma. Clin Exp Metastasis. 1988 May-Jun;6(3):245-53.
Sava G, Pharmacological aspects and therapeutic applications of lysozymes. Exs 1996; 75: 433-49.
Sava G, Reduction of B16 melanoma metastases by oral administration of egg-white lysozyme. Cancer Chemother Pharmacol. 1989;25(3):221-2.
Schirrmacher V, Bai L, Umansky V, Yu L, Xing Y, Qian Z. Newcastle disease virus activates macrophages for anti-tumor activity. Int J Oncol. 2000 Feb;16(2):363-73.
Shugars DC, Watkins CA, Cowen HJ. Salivary concentration of secretory leukocyte protease inhibitor, an antimicrobial protein, is decreased with advanced age. Gerontology. 2001 Sep-Oct;47(5):246-53.
Talageri VR, Seshadri KN, Advani SH. II-Evaluation of the prognostic value of the plasma lysozyme levels in leukaemia patients during therapy. Indian J Cancer. 1981 Dec;18(4):262-7.
Tsuboi Y. [Evaluation on the clinical effect of lysozyme chloride in radiotherapy]. Rinsho Hoshasen. 1982 Oct;27(11):1271-4.
Vacca A, Campobasso N, Iodice G, Ronco M, Dammacco F. Cyclic lysozyme administration as a tool for immunopotentiation in patients with multiple myeloma. Chemioterapia. 1985 Apr;4(2):147-55.
Velardi A, Spinozzi F, Rambotti P, Tabilio A, Losito A, Zampi I, Cernetti C, Martelli MF, Grignani F, Davis S. The in vivo effect of thymic factor (thymostimulin) administration on circulating immune complexes and serum lysozyme levels in untreated Hodgkin's disease patients. J Clin Oncol. 1983 Feb;1(2):117-25.
Veremeenko KN, Opanashchenko GA, Karpenko GF, Raiko IE. [Use of terrilytin combined with lysozyme in the treatment of postoperative wounds in patients with laryngeal cancer]. Vestn Otorinolaringol. 1985 Nov-Dec;(6):65-9.
Warren JS, Rinehart JJ, Zwilling BS, Neidhart JA. Lysozyme enhancement of tumor cell immunoprotection in a murine fibrosarcoma. Cancer Res. 1981 May;41(5):1642.
Yamaoka K, Yoshioka T. [Effects of lysozyme chloride on immune responses of patients with uterine cervical cancer]. Gan To Kagaku Ryoho. 1983 Aug;10(8):1803-9.