

DAFTAR PUSTAKA

- Akar, B., and Sibel, F. 1999. Teleme Production by Purified Ficin. *Journal of Food Quality*. 22 : 671-680.
- Amersham Biosciences. 2002. Gel Fitratio : Principles and Methods 18-1022-18. Edition Al. Chapter 1 Gel Filtration In Practice. 1-118. www.chromatography.amershambiosciences.com
- Amersham Pharmacia. 2004. Ion Exchange Chromatography : Principles and Methods. Edition AA. 1-155. ISBN 91 970490-3-4. www.apbiotech.com.
- Andrews, B.A., Schmidt, A.S., Asenjo, J.A. 2005. Correlation For The Protein Behavior Of Protein In Aqueous Two-Phase System: Effect Of Surface Hydrophobicity And Charge. *Biotechnol Bioeng*. 90 : 380-90.
- Arakawa, T., Timaheff, S.N. 1882. Stabilization of Protein Structure by Sugars. *Biochemistry*. 21 : 6536-6544.
- Asenjo, J.A., Andrews, B.A. 2011. Aqueous Two Phase Systems For Protein Separation : A Perspective. *I A*. 1218 : 8826-35.
- Asenjo, J.A., Andrews, B.A. 2011. Aqueous Two-phase System for Protein Separation : A Perspective. *J. Chromatogr A*. 1218 : 8826-8835.
- Babu, B.R., Rastogi, N.K., Raghavarao, K.S.M.S. 2008. Liquid-liquid Extraction of Bromelain and Polyphenol Oxidase Using Aqueous Two-phase System. *Chem Eng Process*. 47 (1) 83-89.
- Baeyens-Volant, D., Andre, M., Rachida E. M., Ruddy, W., Mohamed, A. 2015. A Novel Form of Ficin from *Ficus carica* Latex ; Purification and Characterizaion. *Phytochemistry*. 117 : 154-167.
- Battacharayya, L. and Rohrer, J.S. 2012. *Applications of Ion Chromatography for Pharmaeutical and Biological Products*. New Jersey, John Wiley and Sons.
- Bayraktar, H., Onal, S. 2013. Concentration and Purification of Alpha- Galactosidase from Watermelon (*Citrullus vulgaris*) by Three Phase Partioning. *Separation Purification Technology*. 118 : 835-841.
- Ben, A. A., S. Besbes, H. Attia and C. Blecker. 2017. Milk-Clotting Properties of Plant Rennets and Their Enzymatic Rheological, And Sensoryrole In Cheese Making : A review. *International Journal Food Properties*. 20 : 76-93.
- Bruneton, J. 2009. Pharmacognosie, Photochimie, Plantes Medicinales. Lavoisier (editor). France.p.1292.
- Cai, T., Jiaju, H., Guosheng, L., Haide, Z., Anhua, D., Jian, P. 2015. Extraction and Process Conditions Optimization of Ficin by Ionic Liquid Aqueous Two-phase

System. *Journal of Food Engineering and Technology*. Vol. 4, No. 2.

Chaudhary, R., Jain, S., Muralidhar, K. and Gupta, M.N. 2006. Purification of Bubaline Letuinizing Hormone by Gel Filtration Chromatography in the Presence of the Blue Dextran. *Process Biochem.* 41, 526-566.

Choi, K. H. and Luren, R. A. 2000. Amino-acid Sequence and Glycan Structures of Cysteine Protease with Proline Specificity from Ginger Rhizome (*Zhingiber officinake*). *Eur.J.Biochem.* 267 : 1516-1526.

Cormier, F., Charest, C., Dufresne, C. 1989. Partial Purification And Properties Of Proteases From Fig (*Ficus carica*) Callus Culture. *Biotechnol. Lett.* 11: 797-802.

Culter, P. 2004. Protein Purification Protocols Second Edition. New Jersey : Humana Press.

Daffri, A., H. Zerier, A. Benlounissi and B. Chebel. 2019. Extraction of Ficin from Two Varieties of *Ficus carica* Fig Tree Latex and Comparative Enzymatic Characterization. *International Journal of Agricultural and Biosciences.* 9 (1) : 47-50.

Devaraj, K. B., Lalitha, R. G., and V. Prakash. 2008. An Unusual Thermostable Aspartic Protease From The Latex Of *Ficus racemosa* L. *Phytochemistry.* 69 : 647-655.

Devaraj, K.B., Parigi, R.K. and Vishweshwariah, P. 2008. Purification, Characterization and Solvent-Induced Thermal Stabilization of Ficin from *Ficus carica*. *Journal Agricultural and Food Chemistry.* 56 : 11417-11423.

Dewi, K., Gita, M., Sudjino, Suharyanto. 2016. *Effects of Sodium Azide Cytokininon Vegetative Growth and Yield of Black Rice Plant (Oryza sativa L.). AIP Confernce Proceedings 1755. Advance of Science and Technology for Society.*

Dunn, M. J. 1989. Determination of Total Protein Concentration, in Harris, E.LV. and S. Angel (ed.), *Protein Purification Methods*. Oxford, England :IRL Press.

El-Shibiny, S., Abd El-Salam, M.H., Rifaat, I.D. and Fahmi, A.H. 1973. Studies on Milk Clotting Enzymes from Plant Sources. II. Separation of Milk Clotting Enzymes from *Ficus carica* var. Soltani. *Sudan Journal Food Science Technology.* 5 : 30-34.

Englund, P.T., King, T.P., Craig, L.C., Walti, A. 1968. Ficin, Its Isolation and Characterization. *Biochemistry.* 7 : 163-175.

Estepia-Saloma, E., Vazquez-Villegas, P., Aguilar, O., Rito-Palomares, M. 2014. Continues Aqueous Two-Phase Systems Devices For The Recovery Of Biological Products. *Food Bioprod Process.* 92 : 101-12.

Fatchiya. 2011. *Biologi Molekuler Prinsip Dasar dan Analisis*. Jakarta : Erlangga

Feng, Z.L. and N. Ma. 2010. Partional Behavior of Ficin in PEG/(NH₄)₂SO₄

Two-phase Aqueous System. *Journal Food Science*. 31 (19) : 67-70.

Freitas, C.D.T., Oliviera, J.S., Miranda, M.R.A., Macedo, N.M.R., Pereira, S.M., Villas, B. L.A. and Ramos, M.V. 2007. *Plant Physiology and Biochemistry*. 45 : 781-789

Gagaoua, Mohammed, Nawel, B., Amel, B.D., Ferhat, Z., Sabrina, N.R., Kahina, H., and Hiba, R.B. 2014. Three-Phase Partitioning As An Efficient Method for the Purification and Recovery of Ficin from Mediterranean fig (*Ficus carica* L.) latex. *Journal Separation and Purification Technology*. 132 : 461-467.

Gautam, S.S., Mishra, S.K., Dash, V., Goyal, A.K., Rath, G. 2010. Comparative Study of Extraction, Purification, and Estimation of Bromelain from Stem and Fruit of Pineapple Plant. *Thai J Pharm*. 34(1) : 67-76.

Georis, J. and Esteves, F. 2000. An additional Aromatic Interaction Improves the Thermostability and Thermophilicity of A Mesophilic Family 11 Xylanase : Structural Basis and Molecular Study. *Protein Science*. 9 : 466-475.

Grilo, A.L., Raquel Aires-Barros, M., Azevedo, A.M. 2016. Partitioning In Aqueous Two-Phase System : Fundamental, Applications And Trends. *Sep Purif Rev*. 45 : 68-80.

Gupta, R., Bradoo, S., Saxena, R.K. 1999. Aqueous Two-phase System: An Attractive Technology for Downstream Processing of Biomolecules. *Curr Sci*. 77 (4) : 520-523.

Harris, E.L.V. 1989. Purification Strategy. Di dalam : Harris E.L.V and Angal, S, Editor. *Protein Purification Methods : A Practical Approach*. Ney York : IRL Press.

Hollaway, M.R. 1968. The Proflavin-Induced Increase the Catalytic Activity of Ficin. *Eur. J. Biochem*. 5 : 366-375.

Homaei, A., Roberto, S., Rasoul, E. and Roohollah, H. 2017. Purification, Catalytic, Kinetic and Thermodynamic Characteristics of a Novel ficin from *Ficus johannis*. *Journal of Biocatalysis and Agricultural Biotechnology*.

Iqbal, M., Yanfei, T., Shuyu, X., Dongmei, C., Xu, W., Lingli, H., Dapeng, P., Adeel, S., Muhammad, A.B.S, Hafiz, H., Saeed, A and Zongui, Y 2016. Aqueous Two-Phase System (ATPS) : An Overview And Advances In Its Applications. *Biological Procedures Online*. 18 : 18

Johannson, H.O., Feitosa, E., Pessoa, A. 2011. A Phase Diagrams of the Aqueous Two-phase System of Poly (ethylene glycol)/Sodium Polyacrylate/Salts. *Polymers*. 3 (1) : 587-601.

Katsaros, G.I., Katapodis, P., Taoukis, P.S. 2009. High Hydrostatic Pressure Inactivation Kinetics of the Plant Protease Ficin and Papain. *J. Food Eng*. 91 : 656-661.

- Ketnawa, S., Rawdkuen, S., Chaiwut, P. 2010. Two-phase Partitioning and Collagen Hydrolysis of Bromelain from Pineapple Peel *Nang Lae* cultivar. *J. Biochem Eng.* 52 (2-3) : 205-211.
- Kim, Jun-Pyoung, Jai-Sin, S. and Jung-Sook, K. 1986. Isolation and Purification of Ficin from Fig Latex. *Korean J. Food Sci. Technol.* 18 (4) : 270- 277.
- Kramer, D.E., Whitaker, J.R., Li. 1964. Ficus Enzymes, Properties of the Proteolytic Enzymes from the Latex of *Ficus carica* Var Kadota. *J. Biol.Chem.* 239 : 2178-2183.
- Krott, A.A., Hamilto, S., Webb, E.C., Zerner, B. 1974. Ficans (E.3.4.22.3), Purification and Characterization of the Enzymic Component of the Latex of *Ficus glabrata*. *Biochemistry.* 13 : 2023-2028.
- Kuddus, M. 2019. Enzymes in Food Biotechnology. Department of Biochemistry : Saudi Arabia
- Kumar, V.V., Sathyaselvabala, V., Premkumar, M.P., Vidyadevi, T., Sivanesan, S. Biochemical Charaterization of the Thre Phase Partioned of Laccase and Its Application in Decolorization and Degradation of Synthetic Dyes. *J.Mol.Catal.B-Enz.* 74 : 63-72.
- Kumar, V.V., V. Sathyaselvabala, M.P. Premkumar, T.Vidyadevi, S. Sivanesan. 2012. Biochemical Characterization of Three Phase Partition Laccase and Its Application in Decolorization and Degradation of Synthetic Dyes. *J.Mol.Catal.B-Enz.* 74 : 63-72.
- Lehninger, A.L. 1993. *Dasar-Dasar Biokimia Jilid I*. Thenawidjaja, penerjemah. Jakarta : Erlangga.
- _____. 2004. Principles of Biochemistry Fourth Edition. New York, W. H.Freeman.
- _____. 2008. *Principles of Biochemistry. Fifth Edition*. New York. : David L.Nelson and Michael M.Cox.W.H.Freeman and Company.
- Li, B. B., Smith, B., Hossain, M. M. 2006. Separation And Purification In The Food Industry Extraction Of Phenolics From Citrus Peels: II. Enzyme- Assisted Extraction Method. *Separation and Purification Technology.* 48 : 189-196.
- Liener, I.E.and Friedenson, B. 1970. Ficin. *Methods Enzymol.* 19 : 261-273. Lovrien, R., C. Gpldensoph, P.C. Anderson, B. Odegaard. 1987. Three Phase Partitioning (TPP) Via t-butanol : Enzyme Separation from Crudes, Protein Purification . *Micro Macro.* 131-148.
- Lu, H., Zhi, Q.H., Lei, Z., Shan, D.S. and Shuo, Y. 2008. Purification and Characterization Enzyme of a Preteolytic Enzyme from Fig Latex. *Chem. Res* : Chinese Universites.
- Manzor, Z., Ali, N., Hamid, M., Ikram, H. 2016. Bromealin : Methods of Extraction, Purification and Therapeutic Applications. *J. Brazil Archieves of Biology and*

Technology. 59 : e16150010.

- Mazri, C., Hammer el, A.S., Hoicine, S. 2018. Characterization and Application of Phytochemicals Substances of the Fig Tree : Biological and Sensory Characterization of Ficin and Cheese: Fresh and Soft". *Asian Journal of Applied Science and Engineering*. Vol. 7, No. 2.
- Mazzola, P.G., Lopes, A.M., Hsmann, F.A., Jozala, A.F., Penna, T.C., Magalhaes, P.O., Rangel-Yagui, .C.O., Pessoa, Jr. A. 2008. A Liquid-Liquid Extraction Of Biomolecules : An Overview And Update Of The Main Techniques. *J Chem Technol Biot*. 83 : 143-57.
- Miller, M.F., G.W. Davis., S.C. Seideman. 1988. Effects of Papain, Ficin, and Spleen Enzyme on Textural, Visual, Cooking, and Sensory Properties of Beef Bullock Restructured Steaks. *Journal of Food Quality*. 11 : 321-330.
- Mnif, I.H., Rayda, S., Rim, N., Samiha, M., Moncef, N, and Alya, S.K. 2014. *A Cystein Protease Isolated from the Latex ff Ficus micocarpa : Purification and Biochemical Characterization*. New York : Springer Science+Business Media New York.
- Monti, R., Basilio, C.A., Trevisan, H.C. and Contiero, J. 2000. Purification of Papain from Fresh Latex of *Carica papaya*. *Brazilian Archives of Biology and Technology*. 45 (5) : 501-507.
- Natsir, H. 2010. Kajian enzim kinetase termostabil dari bakteri termofil ; produksi, pemurnian, karakterisasi dan aplikasi dalam hidrolisis kitin. [Disertasi] Makassar : Program pasca sarjana universitas hasanuddin Makassar.
- Naz, S. 2002. *Enzyme and Food*. Pakistan : Oxford University Press.
- Nouani, A., E. Dako, A. Morsli, N. Belhamiche, S.Belbraouet, M. Bellal, A. Dadie. 2009. Characterization of The Purified Coagulant Extracts Derived From Artichoke Flowers (*Cynara Scolymus*) and From The Fig Tree Latex (*Ficus Carica*) In The Light of Their Use In The Manufacture Of Traditional Cheeses In Algeria. *J. Food. Technol*. 7 : 20-29.
- Olivera N. A., Lagomarsino, G., Andrews, B.A., Asenjo, J.A. 2004. Effect Of Electrostatic Energy On Partitioning Of Proteins In Aqueous Two- Phase System. *J Chromatogr B*. 907 : 81-6
- Oliviera, A.P., L.R. Silva, P.G.D.E. Pinho, A Gil-Izquierdo, P Valentao and B.M. Silva. 2010. Volatile Profiling of *Ficus carica* varieties by HS-SPME and GC-ITMS. *Food Chemistry*. 123 : 548-557.
- Oner, M.D. and Akbar, B. 1993. Separation of the Proteolytic Enzymes from Fig Tree Latex and Its Utilization in Gaziantep Cheese Production. *Lebensm-Wiss. Und Technology*. 26 : 318-321.
- Ozer, B., Akardere, E., Celem, E.B., Onal, S. Three Phase Partioning As A Rapid Efficient Method for Purification of Intervase from Tomato. *J. Biochem. Eng*. 50 : 110-115

- Palmer, T. 1991. *Understanding Enzymes*. Third Edition. New York : Ellis Haward.
- Paul, N.C., Robert, P. and Ovellete. 1985. *Biotechnology*, Technomic. Publishing co.Inc, Lancater-Basel,p.534-553.
- Perello, M., Maria, C.A., Nestor, O. C., and Nora, S.P. 2000. Proteolytic Enzymes from the Latex of *Ficus pumilia* L. (*Moraceae*). *Acta Farm. Bonaerense*. 19 (4) : 257-62.
- Rabelo, A.P.B., Tambourigi, E.B., Pessoa, A. 2004. Bromelain Partitioning in Two-phase Aqueous Systems Containing PEO-PEO-PEO Block Copolymers. *J. Chromatogr B*. 807 (1) : 61-68.
- Rachana, C.R. and Lyju Jose V. 2014. Three Phase Partitioning- A Novel Purification Method. *International Journal Of Chem Tech Research*. 6 (7) : 3467-3472.
- Raja, S., Murty, V.R., Thivaharan, V., Rajasekar, V., Ramesh, V. 2011. Aqueous Two-Phase System For Thr Recovery Of Biomolecules-A Review. *Sci Technol*. 1 : 7-16.
- Ramezani, R., Aminlari, M., Fallahi, H. 2003. Effect Of Chemically Modified Soy Protein and Ficin-Tenderized Meat On The Quality Attributes Of Sausage. *J. Food Sci*. 68 (1) : 85-88.
- Rascovic, B., Olga, B., Radivoje, P., Vesna, N. and Natalia, P. 2014. Identification, Purification and Characterization of A Novel Collagenolytic Serine Protease from Fig (*Ficus carica* var. Brown Turkey) Latex. *Journal of Bioscience and Bioengineering*.
- Richter, G., H.P. Schwarz, F. Doner, P.L. Turecek. 2002. Activation and Inactivation of Human Factor X By Protease Derived From *Ficus carica*, *Brit. J.Haematol*. 119 : 1042-1051.
- Rifaat, I.D., El-Shibiny, S., Abd El-Salam, M.H. and Fahmi, A.H. 1970. Studies on Milk Clotting Enzymes from Higher Plants. I. Milk Clotting Activity from Some Local Plants. *Indian Journal Dairy Science*. 23 : 151-154.
- Rosenberg, I.M. 1996. *Protein Analysis and Purification : Benchtop Technique*. Boston : Birkhauser.
- Safriani, N., Rini, A. C., Bakhtiar. 2011. Pengaruh Konsentrasi Ekstrak Enzim Fisin (*Crude Ficin*) dan Lama Fermentasi Terhadap Rendemen dan Kualitas Minyak Kelapa. *Jurnal Teknologi dan Industri Pertanian Indonesia*. Vol 3, No 3. ISSN : 2085 - 4927.
- Sajuthi, D., I.Suparto, Yanti dan W.Praira. 2010. Purifikasi dan Pencirian Enzim Protease Fibrinolitik dari Ekstrak Jagung Merang. *Makara J Sci*. 14(2) : 145-150.
- Saxena, L., Iyer, B.K, Ananthanarayan, L. 2007. Three Phase Partioning as a Novel Method of Purification of Ragi (*Eluisine coracana*) bifunctional amylas/protease

inhibitor. *Process Biochem.* 42(3) : 491-495.

Schomburg, I., Chang, A., Placzeck, S., Sohngen, C., Roter, M., Lang, M., Munartto, C., Ulas, S., Stelzer, M., Grote, A., Scheer, M., Schomburg, D. 2013. BRENDA in 2013 : Integrated reactions, kinetic data, enzyme function data, improves diseases classification : new options and contents in BRENDA. *Nucleic Acids Res.* 41 (Database issue), D764-72.

Scopes, Robert K. 1994. *Protein Purification Principle and Practice*. Third Edition. New York : Springer Science + Business Media.

Sgarbieri, V.C., Gupte, S.M., Kramer, D.E, Whitaker, J.R. 1964. Ficus Enzymes. I. Separation of the Poteolytic Enzymes of Ficus Carica and Ficus Glabrata Lacties. *J. Bio. Chem.* 239 : 2170-2177.

Shah, M.A., A.M. Shabir and M.A.P. Aray. 2014. Plant Protease As Milk-clotting Enzymes in Cheese Making : A review. *Dairy Science Technology.* 94 : 5-16.

Siar, El-Hocine, Roberto, M-S., Mohammed, N.Z., Roberto F-L. 2019. Use of Glyoxyl-agarose Immobilized Ficin Extract in Milk Coagulation : Unexpected Importance of the Ficin Loading on the Biocatalysts. *International Journal of Biological Macromolecules.*

Singh, P. K., Neeraj, S., and B. K. Ojha. 2019. *Enzymes In Food Biotechnology Chapter eight*. Rewa (India) : Elsevier Academic Press. Hal 111-128

Singh, R.K., S. Gourinath, S. Sharma, I. Roy, M.N. Gupta, C.Betzel, A. Srinivasan, T.P. Singh. 2001. Enhancement of Enzyme Activity Through Three-phase Partitioning : Crystal Structure of A Modified Serine Proteinase At 1,3 A resolution. *Protein Eng.* 14 : 110-115.

Singleton, A. and David J. B. 2013. *Handbook Of Proteolytic Enzyme, third edition*. Departments of Chemistry, and Human Metabolism and Clinical Biochemistry, Sheffield (United Kingdom) : Elsevier Academic Press. 2 : 1877-1879

Sorensen, H., Sorensesn, S., Bjegegaard C. and Michelson, S. 1999. *Chromatography and Capillary Electrophoresis in Food Analysis*. Cambridge : The Royal Society of Chemistry.

Sugiura, M., Sasaki, M. 1974. Studies on Proteinase from *Ficus carica* var. Horaishi. V. Purification and Properties of a Sugar-containing Proteinase. *Biochim.Biophys. Acta* 350 : 38-47.

Suhartono, M.T. 1989. *Enzim dan Bioteknologi*. Bogor : Pusat Antar Universitas.

Suhartono, M.T., Suwato, A., Widjaya, H. 1992. *Diklat Struktur dan Biokimiawi Protein*. Bogor : PAU IPB

Timasheff, S.N., Lee, J.C., Pitz, E.P., Tweedy, N.J. 1976. The Interaction of Tubulin and Other Proteins with Structure-Stabilizing Solvents. *Colloid Interface Sci.* 55 : 658-663.

- Walter, H and Johansson, G. 1994. *Aqueous Two-Phase System*. Berlin : Elsevier.
- Wang, W.T., H.D. Zhang, Z.G. Jiang. Extraction of Papain by Ionic Liquid/Aqueous Two-phase System and Optimization of Process Conditions. *Journal Modern Food Science and Technology*. 30(9) : 210-216.
- Wati, R.K., T. Theppakorn, S. Benjakul, S. Rawdkuen. 2009. Three Phase Partitioning of Trypsin Inhibitor from Legume Seeds. *Process Biochemistry*. 44 : 1307-1314.
- Webb, E.C. and Dixon, M. 1979. *Enzymes*. New York : Academic Press. Westermeier, R. 2001. *Electrophoresis in Practice* . Third Edition, Wiley-VCH, ISBN, 3-527-303006 : Weinheim, Germany.
- Whitaker, J. R. 1994. *Principle of Enzymology for the Food Science*. Second Edition. New York : Marel Decker.
- Whitaker, J.R. 1969. Papain and Ficin Catalyzed Reaction. Effects of pH on Activity and Conformation of Ficin. *Biochemistry*. 8 : 1986-1901
- Wiemann, P. P. 2018. *Enzyme In Human and Animal Nutrition*. Lienen (Germany) : Elsevier Academic Press. Hal 267 -277.
- Williams, D.C, Valdemiro C., Sgarbieri and John R. Whitaker. Proteolytic Activity In The Genus Ficus. *Plant Physiol*. 43 : 1083-1088.
- Williams, D.C., Whitaker, J.R. 1969. Multiple Molecular Forms of *Ficus glabrata* ficin. Their Separation and Relative Physical, Chemical and Enzymatic Properties. *Plant Physiol*. 44 : 1574-1583.
- Wilson, K. and Walker, J. M. 2000. Protein and Enzyme Techniques “in Wilson K and Walker J.M (ed) *Practical Biochemistry*. Cambridge University Press, p.161-226.
- Witono, Y. 2013. *Enzim Biduri Agen Aktif Potensial Untuk Proses Pangan*. Surabaya : Pustaka Radja.
- Yin, L., Sun, C.K., Han, X., Xu, L., Xu, Y., Qi, Y., Peng, J. 2011. Preparative Purification of Bromelain (EC 3.4.22.33) from Pineapple Fruit by High-Speed Counter-Current Chromatography Using A Reverse Micelle Solvent System. *Food Chem*. 129 (3) : 925-932.
- Yuwono, T. 2005. *Biologi Molekuler*. Jakarta : Erlangga.
- Zafarani, M.M.T., Hamzehzadeh, S., Nasiri, S. 2012. A New Aqueous Biphasic System Containing Polypropylene Glycol And A Water-Miscible Ionic Liquid. *Biotechnol Progr*. 66 : 146-56.
- Zare, H., Ali, A. Moosavi-Movahedi, Maryam, S., Morteza M., Ali, A.S., Nader, S. 2013. Purification and Autolysis of the Ficin Isoforms from Fig (*Ficus carica* cv. Sabz) Latex. *Phytochemistry*. 87 : 16-22.

Zheng, W., D. Shen, Y. Pan, D. Yi, Y. Long, and H. Zheng. 2019. Enhancing the Peroxide-Like Activity of Ficin by Rational Blocking Thiol Groups for Colorimetric Detection of Biothiols. *Talanta*. 204 : 833-839.

Zheng, W., Jiahui, L., Danyang, Y., Yadi, P., Yijuan, L., Huzhi, Z. 2020. Ficin Encapsulated in Mesoporous Metal-Organic Frameworks with Enhanced Peroxide-like Activity and Colorimetric Detection of Glucose. *Spechtrochimia Acta : Molecular and Biomolecular Spectroscopy*.

