

DAFTAR PUSTAKA

- Adami, R., Reverchon, E., Adami, R., 2006, Nanomaterials and supercritical fluids, *Journal of Supercritical Fluids*, **37**: 1–22, doi:10.1016/j.supflu.2005.08.003.
- Ahuja, S., Dong, M.W., 2005, Handbook of pharmaceutical analysis by HPLC., First. Ed, Elsevier Academic Press, United Kingdom.
- Akbarzadeh, A., Rezaei-sadabady, R., Davaran, S., Joo, S.W., Zarghami, N., 2013, Liposome: classification, preparation, and applications, *Nanoscale Research Letters*, **8**: 1–9.
- Alexander, M., Lopez, A.A., Fang, Y., Corredig, M., 2012, LWT - Food science and technology incorporation of phytosterols in soy phospholipids nanoliposomes: encapsulation efficiency and stability, *LWT-Food Science and Technology*, **47**: 427–436, doi:10.1016/j.lwt.2012.01.041.
- Almgren, M., Edwards, K., 2000, Cryo transmission electron microscopy of liposomes and related structures, *Colloids and Surfaces: A Physicochemical and Engineering Aspects*, **174**: 3–21.
- Anderson, M., Omri, A., Anderson, M., Omri, A., 2016, The Effect of Different Lipid Components on the In Vitro Stability and Release Kinetics of Liposome Formulations, *Drug Delivery*, **7544**, doi:10.1080/10717540490265243.
- Arthur Ray Love, Nutley, N. (US);, Judith Lynne Kerschner, H., NJ (US); Michael James Barratt, O., Ridge, NJ (US); Yan Zhou, M., (US), N., 2003, Stabilization of resorcinol derivatives in cosmetic compositions, USA Pat. Appl. Publ. US 2003/01.
- Badran, M., 2014, Formulation and in vitro evaluation of flufenamic acid loaded deformable liposome for improved skin delivery, *Digest Journal of Nanomaterials and Biostructures*, **9**: 83–91.
- Bally, M.B., Hope, M.J., Mayer, L.D., Adden, T.H.D.M., Cullis, P.R., 1988, Novel procedures for generating and loading liposomal systems. Liposomes as Drug Carriers, John Wiley & Sons Ltd.
- Bangham, A.D., Standish, M.M., Watkins, J.C., 1965, Diffusion of univalent ions across the lamellae of swollen phospholipids, *Journal Molecular Biology*, **13**: 238–252, IN26–IN27, doi:10.1016/S0022-2836(65)80093-6.
- Barenholz, Y., 2001, Liposome application: problems and prospects, *Current Opinion*

in *Colloid and Interface Science*, **6**: 66–77.doi:10.1016/S1359-0294(00)00090-X.

Barisic, K., Zanic, T., Cepelak, I., Filipovic-grcic, J., 2002, High efficiency entrapment of superoxide dismutase into mucoadhesive chitosan-coated liposomes, *European Journal of Pharmaceutical Sciences*, **15**: 441–448.

Blume, A.L.F.R.E.D., 1979, A comparative study of the phase transitions of phospholipid bilayers and monolayers, *Biochimica et Biophysica Acta*, **557**: 32–34.

Buzea, C., Pacheco, I.I., Robbie, K., 2007, Nanomaterials and nanoparticles : sources and toxicity nanomaterials and nanoparticles : Sources and toxicity, *Biointerphases*, **2**, doi:10.1116/1.2815690.

Caffrey, M., 1985, Kinetics and mechanism of the lamellar gel/lamellar liquid-crystal and lamellar/inverted hexagonal phase transition in phosphatidylethanolamine : A real-time X-ray diffraction study using synchrotron radiation, *Biochemistry*, **24**: 4826–4844.

Cevc, G., Blume, G., 2004, Hydrocortisone and dexamethasone in very deformable drug carriers have increased biological potency, prolonged effect, and reduced therapeutic dosage, *Biochimica Biophysica Acta*, **1663**: 61–73, doi:10.1016/j.bbamem.2004.01.006.

Cevc, G., Schätzlein, A., Richardsen, H., 2002, Ultradeformable lipid vesicles can penetrate the skin and other semi-permeable barriers unfragmented. Evidence from double label CLSM experiments and direct size. Measurements, *Biochimica Biophysica Acta*, **1564**: 21–30.

Chan, Y., Chen, B., Chiu, C.P., Lu, Y., 2004, The influence of phytosterols on the encapsulation efficiency of cholesterol liposomes, *International Journal of Food Science and Technology*, **39**: 985–995, doi:10.1111/j.1365-2621.2004.00867.x.

Chen, C., Han, D., Cai, C., Tang, X., 2010, An overview of liposome lyophilization and its future potential, *Journal of Control Release*, **142**: 299–311, doi:10.1016/j.jconrel.2009.10.024.

Chen, C., Johnston, T.D., Jeon, H., Gedaly, R., Mchugh, P.P., Burke, T.G., Ranjan, D., 2009, An in vitro study of liposomal curcumin : stability , toxicity and biological activity in human lymphocytes and epstein-barr virus-transformed human B-cells, *International Journal of Pharmaceutical*, **366**: 133–139, doi:10.1016/j.ijpharm.2008.09.009.

- Chen, M., Liu, X., Fahr, A., 2011, Skin penetration and deposition of carboxyfluorescein and temoporfin from different lipid vesicular systems: In vitro study with finite and infinite dosage application, *International Journal of Pharmaceutical.*, **408**: 223–234, doi:10.1016/j.ijpharm.2011.02.006.
- Chimanuka, B., Gabrie, M., 2002, Preparation of b -artemether liposomes , their HPLC – UV evaluation and relevance for clearing recrudescant parasitaemia in Plasmodium chabaudi malaria-infected mice, *Journal of Pharmaceutical and Biomedical Analysis*, **28**: 13–22.
- De, A.K., Chowdhury, P.P., Chattapadhyay, S., 2014, Quantitative analysis of resorcinol from marketed hair tonic using liquid chromatographic technique, *International Scholarly Research Notices*, **2014**: 1–5.
- de Mattos, A.C., Khalil, N.M., Mainardes, R.M., 2013, Development and validation of an HPLC method for the determination of fluorouracil in polymeric nanoparticles, *Brazilian Journal of Pharmaceutical Sciences*, **49**: 117–126, doi:10.1590/S1984-82502013000100013.
- de Paula, E., Schreier, S., Jarrell, H.C., Fraceto, L.F., 2008, Preferential location of lidocaine and etidocaine in lecithin bilayers as determined by EPR, fluorescence and 2H NMR, *Biophysical Chemistry*, **132**: 47–54, doi:10.1016/j.bpc.2007.10.004.
- Dickinson, E., 1993, Towards more natural emulsifiers, *Trends in Food Science and Technology*, **4**: 330–334, doi:10.1016/0924-2244(93)90103-H.
- Dua, J.S., Rana, A.C., Bhandari, A.K., 2012, Liposome: methods of preparation and applications, *International Journal of Pharmaceutical*, **3**: 14–20.
- Dwiastuti, R., Radifar, M., Marchaban, Noegrohati, S., Istyastono, E.P., 2016, Molecular dynamics simulations and empirical observations on soy lecithin liposome preparation, *Indonesian Journal of Chemistry*, **16**: 222–228.
- Ermer, J., Miller, J., 2005, Method validation in pharmaceutical analysis. A Guide to best Practice., Wiley: New York, WILEY-VCH Verlag GmbH & Co. KGaA, Germany, doi:10.1002/3527604685.fmatter.
- Fathi, M., Mozafari, M.R., Mohebbi, M., 2012, Nanoencapsulation of food ingredients using lipid based delivery systems, *Trends in Food Science and Technology*, **23**: 13–27, doi:10.1016/j.tifs.2011.08.003.
- Fromherz, P., Ruppel, D., 1985, Lipid vesicle formation : the transition from open

- disks to closed shells, *Federation of European Biochemical Societies*, **179**: 155–159.
- Gonzalez, A.G., Herrador, M.A., 2007, A practical guide to analytical method validation, including measurement uncertainty and accuracy profiles, *Trends in Analytical Chemistry*, **26**: 227–238. doi:10.1016/j.trac.2007.01.009.
- Goyal, P., Goyal, K., Kumar, S.G.V., Singh, A., Katore, O.P., Mishra, D.N., 2005, Liposomal drug delivery systems—clinical applications, *Acta Pharm*, **55**: 1–25.
- Hoogevest, P. Van, Prusseit, B., Wajda, R., 2013, Phospholipids: natural functional ingredients and actives for cosmetic products, *International Journal of Applied Science*, **8**: 9–14.
- Huang, Z., Li, X., Zhang, T., Song, Y., She, Z., Li, J., Deng, Y., 2014, Progress involving new technique for liposome preparation, *Asian Journal of Pharmaceutical Sciences*, **9**: 176–182.
- Hudiyanti, D., Radifar, M., Raharjo, T.J., Narsito, N., Noegrohati, S., 2014, A coarse-grained molecular dynamics simulation using NAMD package to reveal aggregation profile of phospholipids self-assembly in water, *Journal of Chemistry*, **2014**: e273084, doi:10.1155/2014/273084.
- Huh, S.Y., Shin, J.W., Na, J.I., Huh, C.H., Youn, S.W., Park, K.C., 2010, The efficacy and safety of 4-n-butylresorcinol 0.1% cream for the treatment of melasma: A randomized controlled split-face trial, *Annual Dermatology*, **22**: 21–25, doi:10.5021/ad.2010.22.1.21.
- Ickenstein, L.M., Arfvidsson, M.C., Needham, D., Mayer, L.D., Edwards, K., 2003, Disc formation in cholesterol-free liposomes during phase transition, *Biochimica Biophysica Acta*, **1614**: 135–138, doi:10.1016/S0005-2736(03)00196-2.
- Iego, S. a N.D., 2012. Guide to dynamic light scattering measurement and analysis. NanoComposix. 1.3, 1–7.
- Imura, T., Otake, K., Hashimoto, S., Gotoh, T., 2002, Preparation and physicochemical properties of various soybean lecithin liposomes using supercritical reverse phase evaporation method, *Colloids and Surfaces Biointerfaces*, **27**: 133–140.
- Jahadi, M., Khosravi-Darani, K., Ehsani, M.R., Mozafari, M.R., Saboury, A.A., Seydahmadian, F., Vafabakhsh, Z., 2012, Evaluating the effects of process

- variables on protease-loaded nano-liposome production by Plackett-Burman design for utilizing in cheese ripening acceleration, *Asian Journal of Chemistry*, **24**: 3891–3894.
- Jufri, M., 2004. Arah dan perkembangan liposome drugs delivery system, *Majalah Ilmu Kefarmasian*, **1**: 59–68.
- Kakumanu, S., Schroeder, A., 2012, Focused Ultrasound - A Novel Tool for Liposome Formulation, *Drug Development and Delivery*, **12**: 47-52.
- Kang, K., Lee, C., Pyo, H., Jeong, N., 2005, Preparation and characterization of nano-liposomes using phosphatidylcholine, *Jornal of Industrial and Engineering Chemistry*, **11**: 847.
- Kim, D.-S., Kim, S.-Y., Park, S.-H., Choi, Y.-G., Kwon, S.-B., Kim, M.-K., Na, J.-I., Youn, S.-W., Park, K.-C., 2005, Inhibitory effects of 4-n-butylresorcinol on tyrosinase activity and melanin synthesis, *Biological and Pharmaceutical Bulletin*, **28**: 2216–2219.
- Knight, C., 1981, Liposomes: from physical structure to therapeutic applications, Elsevier, North Holland.
- Koshiyama, K., Wada, S., 2016, Collapse of a lipid-coated nanobubble and subsequent liposome formation, *Nature Scientific Report*, **6**: 1–8, doi:10.1038/srep28164.
- Koynova, R., Wang, L., Macdonald, R.C., 2008, Cationic phospholipids forming cubic phases: lipoplex structure and transfection efficiency, *Molecular Pharmaceutics*, **5**: 739–744.
- Laouini, A., Jaafar-Maalej, C., Limayem-Blouza, I., Sfar, S., Charcosset, C., Fessi, H., 2012, Preparation, characterization and applications of liposomes: state of the art, *Journal of Colloid Science and Biotechnology*, **1**: 147–168, doi:10.1166/jcsb.2012.1020.
- Lasic, D.D., 1988, The mechanism of vesicle formation, *Biochemistry Journal*, **256**: 1.
- Lasic, D.D., 1987, A general model of vesicle formation, *Journal of Theoretical Biology*, **124**: 35–41.
- Li, J., Wang, X., Zhang, T., Wang, C., Huang, Z., 2015, A review on phospholipids and their main applications in drug delivery systems, *Asian Journal of Pharmaceutical Sciences*, **10**: 81–98, doi:10.1016/j.ajps.2014.09.004.

- Li, R.R., 2006. Soy product off-flavor generating, masking, and flavor creating, 227–248.
- Liu, X., Ruan, L., Mao, W., Wang, J., Shen, Y., Sui, M., 2010, Preparation of RGD-modified Long Circulating Liposome Loading Matrine , and its in vitro Anti-cancer Effects, *International Journal of Medical Sciences*, **7**: 197–208.
- Machado, A.R., de Assis, L.M., Machado, M.I.R., de Souza-Soares, L.A., 2014, Importance of lecithin for encapsulation processes, *African Journal of Food Sciences*, **8**: 176–183.
- Maghraby, G.M.M. El, Williams, A.C., Barry, B.W., 2001, Skin delivery of 5-fluorouracil from ultradeformable and standard liposomes in-vitro, *Journal of Pharmacy and Pharmacology*, **53**: 1069–1077, doi:10.1211/0022357011776450.
- Maghraby, G.M.M. El, Williams, A.C., Barry, B.W., 1999, Skin delivery of oestradiol from deformable and traditional liposomes: mechanistic studies, *Journal of Pharmacy and Pharmacology*, **51**: 1123–1134, doi:10.1211/0022357991776813.
- Martien, R., Adhyatmika, Irianto, I.D.K., Farida, V., Sari, D., 2012, Perkembangan teknologi nanopartikel sebagai sistem penghantaran obat, *Majalah Farmaseutik*, **8**: 133–144.
- Meure, L.A., Foster, N.R., Dehghani, F., 2008, Review article conventional and dense gas techniques for the production of liposomes: A review, *American Association of Pharmaceutical Scientists: Pharmaceutical Sciences and Technology*, **9**: 798–809, doi:10.1208/s12249-008-9097-x.
- Miller, J.N., Miller, J.C., 2010, Statistics and chemometrics for analytical chemistry., Sixth. ed., Pearson Education Limited, United Kingdom.
- Mozafari, M.R., 2010, Nanoliposomes: preparation and analysis., p. 29, doi:10.1007/978-1-60327-360-2.
- Mozafari, M.R., 2005a, Liposomes: an overview of manufacturing techniques, *Cellular and Molecular Biology Letters*, **10**: 711–719.
- Mozafari, M.R., 2005b, Nanoliposomes: from fundamentals to recent developments, Trafford Publishing, Victoria, B.C.

- Mozafari, M.R., Khosravi-darani, K., Borazan, G.G., Cui, J., 2008, Encapsulation of food ingredients using nanoliposome technology, *International Journal of Food Properties*, **11**, doi:10.1080/10942910701648115.
- Mozafari, M.R., Reed, C.J., Rostron, C., 2007, Prospects of anionic nanolipoplexes in nanotherapy: transmission electron microscopy and light scattering studies, *Micron*, **38**: 787–795, doi:10.1016/j.micron.2007.06.007.
- Narsaiah, K., Jha, S.N., Wilson, R.A., Mandge, H.M., 2013, Pediocin-loaded nanoliposomes and hybrid alginate–nanoliposome delivery systems for slow release of pediocin, *BioNanoScience*, **3**: 37–42, doi:10.1007/s12668-012-0069-y.
- Ober, C.A., Gupta, R.B., 2011, Nanoparticle technology for drug delivery, *IDEAS*, **6**: 714–726.
- Ohnishi, N., Yamamoto, E., Tomida, H., Hyodo, K., Ishihara, H., Kikuchi, H., Tahara, K., Takeuchi, H., 2013, Rapid determination of the encapsulation efficiency of a liposome formulation using column-switching HPLC, *International Journal of Pharmaceutics*, **441**: 67–74, doi:10.1016/j.ijpharm.2012.12.019.
- Patel, R.P., Patel, H., Baria, A.H., 2009, Formulation and evaluation of liposomes of ketoconazole, *International Journal of Drug Delivery Technology*, **1**: 16–23.
- Pecora, R., 2000, Dynamic light scattering measurement of nanometer particles in liquids, *Journal of Nanoparticle Research*, **2**: 123–131.
- Phillips, J.C., Braun, R., Wang, W.E.I., Gumbart, J., Tajkhorshid, E., Villa, E., Chipot, C., Skeel, R.D., Poincare, H., 2005, Scalable molecular dynamics with NAMD, *Journal of Computational Chemistry*, **26**: 1781–1802, doi:10.1002/jcc.20289.
- Pickholz, M., Giupponi, G., 2010, Coarse grained simulations of local anesthetics encapsulated into a liposome, *Journal of Physical Chemistry*, **114**: 7009–7015, doi:10.1021/jp909148n.
- Pickholz, M., Oliveira, O.N., Skaf, M.S., 2007, Interactions of chlorpromazine with phospholipid monolayers: effects of the ionization state of the drug, *Biophysical Chemistry*, **125**: 425–434, doi:10.1016/j.bpc.2006.10.010.
- Potocnik, J., 2011, Commission recommendation of 18 October 2011 on the definition of nanomaterial, *Official Journal of European Union*, 2010–2012 (to be

edited).

Putri, D.C., 2016, Pengaruh suhu dan lama sonikasi pada pembuatan liposom dengan kurkumin, Universitas Gadjah Mada, Yogyakarta.

Richardson, E.S., Pitt, W.G., Woodbury, D.J., 2007, The role of cavitation in liposome formation, *Biophysical Journal*, **93**: 4100–7, doi:10.1529/biophysj.107.104042.

Risselada, H.J., Mark, A.E., Marrink, S.J., 2008, Application of mean field boundary potentials in simulations of lipid vesicles, *Journal of Physical Chemistry*, **112**: 7438–7447.

Risselada, H.J., Marrink, S.J., 2009, Curvature effects on lipid packing and dynamics in liposomes revealed by coarse grained molecular dynamics simulations, *Physical Chemistry Chemical Physics*, **11**: 2056–2067, doi:10.1039/b818782g.

Sahil, K., Premjeet, S., Ajay, B., Middha, A., Bhawna, K., 2011, Stealth liposomes : a review, *Journal of Pharmaceutical Sciences and Research*, **2**: 1534–1538.

Schroeder, A., Goldberg, M.S., Kastrup, C., Wang, Y., Jiang, S., Joseph, B.J., Levins, C.G., Kannan, S.T., Langer, R., Anderson, D.G., 2012, Remotely activated protein-producing nanoparticles, *Nanoletters*, **12**: 2685–2689.

Shashi, K., Satinder, K., Bharat, P., 2012, A complete review on: liposome, *International Research Journal of Pharmacy*, **3**: 10–16.

Shen, K.C., Kakumanu, S., Beckett, C.D., Laugharn Jr., J.A., 2015, Use of adaptive focused acousticsTM ultrasound in controlling liposome formation, *Ultrasonics Sonochemistry*, **27**: 638–645, doi:10.1016/j.ultsonch.2015.04.027.

Silva, R., Ferreira, H., Little, C., Cavaco-Paulo, A., 2010, Effect of ultrasound parameters for unilamellar liposome preparation, *Ultrasonics Sonochemistry*, **17**: 628–632, doi:10.1016/j.ultsonch.2009.10.010.

Siwko, M.E., Vries, A.H. De, Mark, A.E., Kozubek, A., Marrink, S.J., 2009, Disturb or stabilize ? A molecular dynamics study of the effects of resorcinolic lipids on phospholipid bilayers, *Biophysical Journal*, **96**: 3140–3153, doi:10.1016/j.bpj.2009.01.040.

Sułkowski, W.W., Pentak, D., Nowak, K., Sułkowska, A., 2005, The influence of temperature, cholesterol content and pH on liposome stability, *Journal of*

- Molecular Structure*, 744-747, doi:10.1016/j.molstruc.2004.11.075.
- Suslick, K.S., 1989, The chemical effects of ultrasound, *Scientific American*, **February**: 80–86.
- Szoka, F., 1980, Comparative properties and methods of preparation of lipid vesicles (Liposomes), *Annual Review of Biophysics and Bioengineering*, **9**: 467–508.
- Taylor, K.M.G., Morris, R.M., 1995, Thermal analysis of phase transition in liposomes behaviour, *Thermochimica Acta*, **248**: 289–301.
- Torchilin, V., Weissig, V., 2003, *Liposomes : A practical approach.*, second edition, Oxford University Press, New York.
- Torchilin, V.P., 2005, Recent advances with liposomes as pharmaceutical carriers, *Nature Review Drug Discovery*, **4**, doi:10.1038/nrd1632.
- Ulrich, A.S., 2002, Biophysical aspects of using liposomes as delivery vehicles, *Bioscience Reports*, **22**: 129–150.
- Verma, D.D., Fahr, A., 2004, Synergistic penetration enhancement effect of ethanol and phospholipids on the topical delivery of cyclosporin, *Journal of Controlled. Release*, **97**: 55–66, doi:10.1016/j.jconrel.2004.02.028.
- Vieira, D.B., Pacheco, L.F., Carmona-ribeiro, A.M., 2006, Assembly of a model hydrophobic drug into cationic bilayer fragments, *Journal of Colloid and Interface Science*, **293**: 240–247, doi:10.1016/j.jcis.2005.06.046.
- Volinsky, R., Cwiklik, L., Jurkiewicz, P., Hof, M., Jungwirth, P., Kinnunen, P.K.J., 2011, Oxidized phosphatidylcholines facilitate phospholipid flip-flop in liposomes, *Biophysical Journal*, **101**: 1376–1384, doi:10.1016/j.bpj.2011.07.051.
- Wang, S., Zhang, J., Jiang, T., Zheng, L., Wang, Z., Zhang, J., Yu, P., 2011, Protective effect of coenzyme Q(10) against oxidative damage in human lens epithelial cells by novel ocular drug carriers, *International Journal of Pharmaceutic*, **403**: 219–229, doi:10.1016/j.ijpharm.2010.10.020.
- Woodbury, D.J., Richardson, E.S., Grigg, A.W., Welling, R.D., Knudson, B.H., Woodbury, D.J., Richardson, E.S., Grigg, A.W., Welling, R.D., Grigg, A.W., Welling, R.D., Knudson, B.H., 2006, Reducing liposome size with ultrasound : bimodal size distributions, *Journal of Liposome Research*, **16**: 57–80, doi:10.1080/08982100500528842.

Wu, H., Sheng, Y., Tsao, H., 2014, Phase behaviors and membrane properties of model liposomes: Temperature effect, *Journal of Chemical Physics*, **124**906, doi:10.1063/1.4896382.

Yamaguchi, T., Nomura, M., Matsuoka, T., Koda, S., 2009, Effects of frequency and power of ultrasound on the size reduction of liposome, *Chemistry and Physics of Lipids*, **160**: 58–62, doi:10.1016/j.chemphyslip.2009.04.002.

Zhao, L., Wei, Y., Zhong, X., Liang, Y., Zhang, X., Li, W., Li, B., Wang, Y., Yu, Y., 2009, PK and tissue distribution of docetaxel in rabbits after i.v. administration of liposomal and injectable formulations, *Journal of Pharmaceutical and Biomedical Analysis*, **49**: 989–996, doi:10.1016/j.jpba.2009.01.016.

Daftar sumber gambar website

1. Liposom
https://en.wikipedia.org/wiki/Nanoparticles_for_drug_delivery_to_the_brain
2. Gambar fosfolipid
https://www.google.com/search?as_st=y&tbm=isch&hl=en&as_q=phospholipid+structure&as_epq=&as_oq=&as_eq=&cr=&as_sitesearch=&safe=images&tbs=sur:fmc#imgrc=4yvDgKYXAzaEiM%3A
3. Gambar fosfatidilkolin
https://www.google.com/search?as_st=y&tbm=isch&hl=en&as_q=phosphatidylcholine&as_epq=&as_oq=&as_eq=&cr=&as_sitesearch=&safe=images&tbs=sur:fmc#imgrc=vJj9BrawHFGrM%3A
4. Gambar fosfatidiletanolamin
https://www.google.com/search?as_st=y&tbm=isch&hl=en&as_q=phosphatidylethanolamine&as_epq=&as_oq=&as_eq=&cr=&as_sitesearch=&safe=images&tbs=sur:fmc#imgrc=6o8Yos3V29DIKM%3A
5. Gambar fosfatidilinositol
https://www.google.com/search?as_st=y&tbm=isch&hl=en&as_q=phosphatidylinositol&as_epq=&as_oq=&as_eq=&cr=&as_sitesearch=&safe=images&tbs=sur:fmc#imgrc=4KfV8F4OpxnNQm%3A