Asst.Prof. Dr. Weerachai Singhatanadgit

PRESENT APPOINTMENT	
Division	Oral and Maxillofacial Surgery Faculty of Dentistry Thammasat University
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Research profile	Research Dentistry TU > Scopus > Researcher ID > ORCID
Research Theme	Thammasat University Research Unit in Mineralized Tissue Reconstruction
Areas of Research Expertise	Bone biology and stem cell-based bone engineering Dentistry Biomaterials

Research funding

Proposal	funding	Amount	Year
Development of nanomaterials for bisphosphonate adsorption and drug delivery towards innovation for prevention of bisphosphonate-related osteonecrosis of the jaw: A biocompatibility study	Dentistry Thammasat University Research Fund	300,000	2023
Development of nanomaterials for bisphosphonate adsorption and drug delivery towards innovation for prevention of bisphosphonate-related osteonecrosis of the jaw	Thammasat University Research Fund	250,000	2022
การพัฒนาวัสดุนาโนเพื่อนาส่งยาและดูดซับบิสฟอสโฟเนตสู่ นวัตกรรมการป้องกันกระดูกขากรรไกรตายที่สัมพันธ์กับ บิสพอสโฟเนต ปีที่ 3	แหล่งทุนภายนอก ววน 67	2,727,900	2024
การพัฒนาวัสดุนาโนเพื่อนาส่งยาและดูดซับบิสฟอสโฟเนตสู่ นวัตกรรมการป้องกันกระดูกขากรรไกรตายที่สัมพันธ์กับ บิสพอสโฟเนต ปีที่ 2	แหล่งทุนภายนอก ววน 66	1,652,500	2023
การพัฒนาวัสดุนาโนเพื่อนาส่งยาและดูดซับบิสฟอสโฟเนตสู่ นวัตกรรมการป้องกันกระดูกขากรรไกรตายที่สัมพันธ์กับ บิสพอสโฟเนต ปีที่ 1	แหล่งทุนภายนอก ววน 65	1,030,500	2022

Presentation of academic

Title	Presentation	funding	About	Year

PUBLICATIONS

Scopus

1	**Platelet Responses to Urethane Dimethacrylate-Based Bone Cements Containing Monocalcium Phosphate/ϵ-Polylysine: Role of ϵ-Polylysine in In Vitro Wound Healing Induced by Platelet-Derived Growth Factor-BB** Klaihmon, P., Sungkhaphan, P., Thavornyutikarn, B., ... Janvikul, W., Singhatanadgit, W. ACS Materials Au, 5(2), pp. 339–352 2025
2	**Regenerative Potential of Neural Stem/Progenitor Cells for Bone Repair** Muangsanit, P., Yuddnaraveesak, P., Singhatanadgit, W. Tissue Engineering Part B Reviews 2025

3	**Biomechanical Evaluation of Stress Distribution in a Natural Tooth Adjacent to a Dental Implant Using Finite Element Modeling** Thaungwilai, K., Tantilertanant, Y., Tomeboon, P., Singhatanadgit, W., Singhatanadgid, P. European Journal of General Dentistry 2025
4	**Cytotoxicity and antifungal effects of combined dexamethasone and miconazole on human oral keratinocytes, gingival fibroblasts, and Candida albicans** Muangsanit, P., Tansirichaiya, S., Lapthanasupkul, P., ... Pimolbutr, K., Singhatanadgit, W. Odontology, e10503 2025
5	**In Vitro Osteo-Immunological Responses of Bioactive Calcium Phosphate-Containing Urethane Dimethacrylate-Based Composites: A Potential Alternative to Poly(methyl methacrylate) Bone Cement** Singhatanadgit, W., Sungkhaphan, P., Thavornyutikarn, B., ... Young, A., Janvikul, W. ACS Materials Au, 4(6), pp. 612–627 2024
6	**Self-etching Ceramic Primer Protocol Provides Efficient Shear Bond Strength and Durability Between Lithium Disilicate Glass-ceramic and Resin Cement: A Potential Alternative to the Conventional Hydrofluoric Acid Protocol** Chitkraisorn, T., Chuinsiri, N., Aungkatawiwat, C., Singhatanadgit, W., Tosiriwatanapong, T. Oral Sciences Reports, 45(3), pp. 45–51 2024
7	**Dual-Functional Drug Delivery System for Bisphosphonate-Related Osteonecrosis Prevention and Its Bioinspired Releasing Model and In Vitro Assessment** Sungkhaphan, P., Thavornyutikarn, B., Muangsanit, P., ... Singhatanadgit, W., Janvikul, W. ACS Omega, 8(29), pp. 26561–26576 2023
8	**Biodegradable Dual-Function Nanocomposite Hydrogels for Prevention of Bisphosphonate-Related Osteonecrosis of the Jaw** Thavornyutikarn, B., Sungkhaphan, P., Kaewkong, P., ... Singhatanadgit, W., Janvikul, W. ACS Applied Bio Materials, 6(4), pp. 1658–1675 2023
9	**Rational design for MgO-modified porous carbon towards enhancing zoledronic acid adsorption** Wongthong, U., Khemthong, P., Youngjan, S., ... Supruangnet, R., Singhatanadgit, W. Applied Surface Science, 615, 156359 2023

10	**Finite Element Analysis of the Mechanical Performance of Non-Restorable Crownless Primary Molars Restored with Intracoronal Core-Supported Crowns: A Proposed Treatment Alternative to Extraction for Severe Early Childhood Caries** Thaungwilai, K., Tantilertanant, Y., Singhatanadgit, W., Singhatanadgid, P. Journal of Clinical Medicine, 12(5), 1872 2023
11	**ICAM-1-mediated osteoblast-T lymphocyte direct interaction increases mineralization through TGF-β1 suppression** Singhatanadgit, W., Olsen, I., Young, A. Journal of Cellular Physiology, 238(2), pp. 420–433 2023
12	**IFNγ-primed periodontal ligament cells regulate T-cell responses via IFNγ-inducible mediators and ICAM-1-mediated direct cell contact** Singhatanadgit, W., Kitpakornsanti, S., Toso, M., Pavasant, P. Royal Society Open Science, 9(7), 220056 2022
13	**Pre-Sintering Airborne Particle Abrasion Improves Surface and Biological Properties of Zirconia** Kueakulkangwanphol, T., Chaianant, N., Tantilertanant, Y., Singhatanadgit, W. Journal of the California Dental Association, 49(11), pp. 697–712 2021
14	**Antibacterial and osteogenic activities of clindamycin-releasing mesoporous silica/carboxymethyl chitosan composite hydrogels** Sungkhaphan, P., Thavornyutikarn, B., Kaewkong, P., ... Singhatanadgit, W., Janvikul, W. Royal Society Open Science, 8(9), 210808 2021
15	**Geranylgeraniol prevents zoledronic acid-mediated reduction of viable mesenchymal stem cells via induction of Rho-dependent YAP activation** Singhatanadgit, W., Hankamolsiri, W., Janvikul, W. Royal Society Open Science, 8(6), 202066 2021
16	**Composite core-supported stainless steel crowns enhance fracture resistance of severely damaged primary posterior teeth** Pultanasarn, P., Thaungwilai, K., Singhatanadgid, P., Prateepsawangwong, B., Singhatanadgit, W. Pediatric Dental Journal, 30(3), pp. 191–200 2020

17	**Investigating mineralization species in cultured bone from human mesenchymal stem cells using synchrotron-based XANES** Toso, M., Singhatanadgit, W., Boonrungsiman, S., Youngjan, S., Khemthong, P. Radiation Physics and Chemistry, 177, 109074 2020
18	**Clindamycin hydrochloride-loaded composite hydrogel of poly((ethylene glycol) dimethacrylate-glycidyl methacrylate) and mesoporous silica nanoparticles for bacterial infection treatment** Sungkhaphan, P., Thavornyutikarn, B., Kaewkong, P., ... Pornsuwan, S., Janvikul, W. Chiang Mai Journal of Science, 47(4 Special Issue 2), pp. 765–775 2020
19	**Analysis of sequential dual immobilization of type I collagen and BMP-2 short peptides on hydrolyzed poly(buthylene succinate)/β-tricalcium phosphate composites for bone tissue engineering** Singhatanadgit, W., Sungkhaphan, P., Theerathanagorn, T., Patntirapong, S., Janvikul, W. Journal of Biomaterials Applications, 34(3), pp. 351–364 2019
20	**Titanium dioxide nanotubes of defined diameter enhance mesenchymal stem cell proliferation via JNK- and ERK-dependent up-regulation of fibroblast growth factor-2 by T lymphocytes** Singhatanadgit, W., Toso, M., Pratheepsawangwong, B., Pimpin, A., Srituravanich, W. Journal of Biomaterials Applications, 33(7), pp. 997–1010 2019
21	**In-vitro responses of T lymphocytes to poly(butylene succinate) based biomaterials** So, M.T., Ntirapong, S.P., Janvikul, W., Nadgit, W.S. Minerva Stomatologica, 66(2), pp. 51–63 2017
22	**Osteoinduction of stem cells by collagen peptide-immobilized hydrolyzed poly(butylene succinate)/β-tricalcium phosphate scaffold for bone tissue engineering** Patntirapong, S., Janvikul, W., Theerathanagorn, T., Singhatanadgit, W. Journal of Biomaterials Applications, 31(6), pp. 859–870 2017
23	**Effect of bidirectional loading on contact and force characteristics under a newly developed masticatory simulator with a Dual-Direction loading system** Singhatanadgit, W., Junkaew, P., Singhatanadgid, P. Dental Materials Journal, 35(6), pp. 952–961 2016
24	**Stem cell adhesion and proliferation on hydrolyzed poly(butylene succinate)/β-tricalcium phosphate composites** Patntirapong, S., Singhatanadgit, W., Meesap, P., ... Toso, M., Janvikul, W.

	Journal of Biomedical Materials Research Part A, 103(2), pp. 658–670 2015
25	**Osteogenic efficacy of bone marrow concentrate in rabbit maxillary sinus grafting** Sununliganon, L., Peng, L., Singhatanadgit, W., Cheung, L.K. Journal of Cranio Maxillofacial Surgery, 42(8), pp. 1753–1765 2014
26	**Development of poly(butylene succinate)/calcium phosphate composites for bone engineering** Ngamviriyavong, P., Patntirapong, S., Janvikul, W., ... Meesap, P., Singhatanadgit, W. Composite Interfaces, 21(5), pp. 431–441 2014
27	**Proper size of the 3-dimensional periodontal ligament stem cell (3D PDLSC) sphere is vital for cell viability: In reply** Singhatanadgit, W., Varodomrujiranon, M. Oral Surgery Oral Medicine Oral Pathology and Oral Radiology, 117(1), pp. 122 2014
28	**Alendronate-induced atypical bone fracture: Evidence that the drug inhibits osteogenesis** Patntirapong, S., Singhatanadgit, W., Arphavasin, S. Journal of Clinical Pharmacy and Therapeutics, 39(4), pp. 349–353 2014
29	**Osteogenic potency of a 3-dimensional scaffold-free bonelike sphere of periodontal ligament stem cells in vitro** Singhatanadgit, W., Varodomrujiranon, M. Oral Surgery Oral Medicine Oral Pathology and Oral Radiology, 116(6), pp. e465–e472 2013
30	**Enhanced osteogenic activity of a poly(butylene succinate)/calcium phosphate composite by simple alkaline hydrolysis** Arphavasin, S., Singhatanadgit, W., Ngamviriyavong, P., ... Meesap, P., Patntirapong, S. Biomedical Materials Bristol, 8(5), 055008 2013
31	**Highly osteogenic PDL stem cell clones specifically express elevated levels of ICAM1, ITGB1 and TERT** Sununliganon, L., Singhatanadgit, W. Cytotechnology, 64(1), pp. 53–63 2012
32	**Zoledronic acid suppresses mineralization through direct cytotoxicity and osteoblast differentiation inhibition** Patntirapong, S., Singhatanadgit, W., Chanruangvanit, C., Lavanrattanakul, K., Satravaha, Y. Journal of Oral Pathology and Medicine, 41(9), pp. 713–720

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33	**Osteogenic potency of stem cell-based genetic engineering targeting Wnt3a and Wnt9a** Singhatanadgit, W., Varodomrujiranon, M. Central European Journal of Biology, 6(6), pp. 963–972 2011
34	**Endogenous BMPR-IB signaling is required for early osteoblast differentiation of human bone cells** Singhatanadgit, W., Olsen, I. In Vitro Cellular and Developmental Biology Animal, 47(3), pp. 251–259 2011
35	**Isolation and characterization of stem cell clones from adult human ligament.** Singhatanadgit, W., Donos, N., Olsen, I. Tissue Engineering Part A, 15(9), pp. 2625–2636 2009
36	**Cissus quadrangularis extract enhances biomineralization through up-regulation of MAPK-dependent alkaline phosphatase activity in osteoblasts** Parisuthiman, D., Singhatanadgit, W., Dechatiwongse, T., Koontongkaew, S. In Vitro Cellular and Developmental Biology Animal, 45(3-4), pp. 194–200 2009
37	**RNA interference of the BMPR-IB gene blocks BMP-2-induced osteogenic gene expression in human bone cells** Singhatanadgit, W., Salih, V., Olsen, I. Cell Biology International, 32(11), pp. 1362–1370 2008
38	**Changes in bone morphogenetic protein receptor-IB localisation regulate osteogenic responses of human bone cells to bone morphogenetic protein-2** Singhatanadgit, W., Mordan, N., Salih, V., Olsen, I. International Journal of Biochemistry and Cell Biology, 40(12), pp. 2854–2864 2008
39	**Up-regulation of bone morphogenetic protein receptor IB by growth factors enhances BMP-2-induced human bone cell functions** Singhatanadgit, W., Salih, V., Olsen, I. Journal of Cellular Physiology, 209(3), pp. 912–922 2006
40	**Shedding of a soluble form of BMP receptor-IB controls bone cell responses to BMP** Singhatanadgit, W., Salih, V., Olsen, I. Bone, 39(5), pp. 1008–1017 2006

41	**Bone morphogenetic protein receptors and bone morphogenetic protein signaling are controlled by tumor necrosis factor-α in human bone cells** Singhatanadgit, W., Salih, V., Olsen, I. International Journal of Biochemistry and Cell Biology, 38(10), pp. 1794–1807 2006

TCI

1	Self-etching Ceramic Primer Protocol Provides Efficient Shear Bond Strength and Durability Between Lithium Disilicate Glass-ceramic and Resin Cement: A Potential Alternative to the Conventional Hydrofluoric Acid Protocal *Top Chitkraisorn, Nontawat Chuinsiri, Chawin Aungkatawiwat, Weerachai Singhatanadgit, Terawat Tosiriwatanapong* Oral Sciences Reports Volume 45, Issue 3, 2024, pp. 45-51
2	Effect of Different Mechanical Properties of Core Build-up Materials on the Root Furcation of A Severely damagedPrimary Molar: A Finite Element Analysis *Nuttha Suwannasri, Kunyawan Thaungwilai, Pairod Singhatanadgid, Nichamon Chaianant, Weerachai Singhatanadgit, Piyaporn Pultanasarn* Srinakharinwirot University Dental Journal Volume 16, Issue 1, 2023, pp. 62-77
3	Clindamycin hydrochloride-loaded composite hydrogel of poly((ethylene glycol) dimethacrylate-glycidyl methacrylate) and mesoporous silica nanoparticles for bacterial infection treatment *Piyarat Sungkhaphan, Boonlom Thavornyutikarn, Pakkanun Kaewkong, Weerachai Singhatanadgit, Soraya Pornsuwan, Wanida Janvikul* Chiang Mai Journal of Science Volume 47, Issue 4 / Special Issue 2, 2020, pp. 765-775
4	Recent advances in a three-dimensional fabrication of hydroxyapatite-based biomaterials for craniofacial bone regeneration *Chanekrid Oupadissakoon, Weerachai Singhatanadgit* Chulalongkorn University Dental Journal Volume 41, Issue 1, 2018, pp. 41-52