

## **SMRITI ARYAL A C (B.D.S (DU), PGT (Japan), Ph.D. (Japan)**

Assistant Professor

College of Dental Medicine

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### **EDUCATION**

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- 2009-2013**      **Ph.D.** Tokyo Medical & Dental University, **Tokyo, Japan**  
**(Japan Government GCOE full scholarship)**
- 2008**            **PGT**, Oral and Maxillofacial Surgery **(JDA full scholarship)**  
Niigata university, **Niigata, Japan**
- 2005**            **B.D.S (Bachelor of Dental Surgery)**, University of Dhaka, Dhaka, Bangladesh

### **PROFESSIONAL AND RESEARCH EXPERIENCES**

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- 2020-Present**    **Assistant Professor, College of Dental Medicine, University of Sharjah, UAE**
- 2018-2020**      **Postdoctoral Research Associate, University of Sharjah, UAE**
- 2015-2017**      **Postdoctoral Fellow (under USA federal government fellowship)**  
Section of Heritable disorders of Bone and Extracellular Matrix  
**Eunice Kennedy Shriver National Institute of Child Health and Human development**  
**National Institute of Health, NIH, Bethesda, Maryland USA**
- 2013-2015**      **Postdoctoral Fellow (under Japanese Society for Promotion of Science, Japan**  
**Government fellowship)**  
Tokyo Medical and Dental University, **Tokyo, Japan**
- 2013**            **Assistant Professor**, Tokyo Medical and Dental University, **Tokyo, Japan**
- 2009-2013**      **Graduate Research Assistant**, Tokyo Medical and Dental University, **Tokyo, Japan**
- 2008-2009**      **Research Student**, Tokyo Medical and Dental University, **Tokyo, Japan**
- 2008**            **Post Graduation Training PGT (under JDA scholarship)**, Department of Oral and  
Maxillofacial surgery, Niigata University, Niigata, Japan.
- 2005-2006**      **Dental Internship Training**, Pioneer Dental College and Hospital,  
University of Dhaka, Dhaka, Bangladesh

## INVITED SPEAKER AND JUDGE

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- ❑ Invited as a special speaker in **Ras Al Khaimah Health Science University** by CPD committee RAKCODS, **UAE**
- ❑ Research Presenter at **Harvard School of Dental Medicine**, USA on “Graduate Students Research Day” 2011, Boston , **USA**  
<http://www.tmd.ac.jp/cmn/gcoe/acheivement/file/20110412harvard.doc>.
- ❑ Post Bac Research presentation Judge, National Institute of Health, Bethesda Campus, USA , 2017
- ❑ Post Bac Research presentation Judge, National Institute of Health, Bethesda Campus, USA , 2016
- ❑ Judge, Montgomery County Science Fair 2016, FDA white oak campus, Springfield, MD, USA  
[http://www.sciencemontgomery.org/cmsfiles/pdf/2016\\_program.pdf](http://www.sciencemontgomery.org/cmsfiles/pdf/2016_program.pdf)

## RESEARCH GRANTS OBTAINED

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- 2013-2015**      **Japanese Society for the Promotion of Science (JSPS)** grant for excellence  
In science under Japan government, Japan  
<https://www.jsps.go.jp/english/e-fellow/data/gaitoku25-2e.pdf>  
<https://research-er.jp/researchers/view/750676>
- 2009- 2013**      **Advanced International Super Studentship Grant**, the Global Center of Excellence (GCOE) program “International Research Center for Molecular Science in Tooth and Bone Diseases” at Tokyo Medical and Dental University, Tokyo, Japan.

## AWARDS/ HONORS

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- 2017**              **Plenary Poster Award**, American Society of Bone and Mineral Research **2017**  
**annual meeting, September, Colorado, USA**
- 2010-2013**      **Excellent Award**, Global Center of Excellence (GCOE) program, Tokyo Medical and Dental University, Advanced International Super Student Recognition Honor (**Ranked #2 for all years**)
- 2013**              **Japanese Society for the Promotion of Science (JSPS)** Postdoctoral Fellowship under Japan government
- 2012**              **President’s Poster Competition Award**, American Society of Bone and Mineral Research 2012 annual meeting, October, Minneapolis, Minnesota, USA.

<http://www.asbmr.org/about/detail.aspx?cid=4a64101a-3996-4eb9-a3b4-47975d661126>

**2011**      **Young Investigator Travel Grant Award**, American Society of Bone and Mineral Research 2011 annual meeting, September, San Diego Convention Center, US

## PROFESSIONAL DEVELOPMENTAL TRAININGS

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**2016**      **Scientist Teaching Science College Teaching**, National Institute of Health (NIH), USA

**2016**      **Research Grants Writing**, National Institute of Health (NIH), USA

## PROFESSIONAL MEMBERSHIPS

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**2020-present**      International Association for Dental Research (IADR)

**2011- present**      Japanese Association for Dental Research (JADR)

**2010- present**      Japanese Society for Bone and Mineral Research (JSBMR)

**2009- present**      American Society for Bone and Mineral Research (ASBMR)

**2019-present**      International Society for Stem Cell Research (ISSCR)

## SCIENTIFIC CONTRIBUTIONS

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**2016-2017**      **Editor**, NIH Postdoctoral Editor board, National Institute of Health, USA

**2015-present**      **Reviewer**, Journal of Bone and Mineral Research (JBMR)

**2015-present**      **Reviewer**, Journal of Bone

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## PUBLICATIONS

### PEER REVIEWED INTERNATIONAL JOURNALS

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Research gate link: [https://www.researchgate.net/profile/Smriti\\_Aryal\\_Ac](https://www.researchgate.net/profile/Smriti_Aryal_Ac)

1. *Nanoscale Thermosensitive Hydrogel Scaffolds Promote the Chondrogenic Differentiation of Dental Pulp Stem and Progenitor Cells: A Minimally Invasive Approach for Cartilage Regeneration*, **Int J Nanomedicine (Q1), (IF 5.4)**  
Wael Talaat, Smriti Aryal Ac, Sausan Al Kawas, A B Rani Samsudin, Nadia G Kandile, David R K Harding, Mohamed M Ghoneim, Waleed Zeiada, Jayalakshmi Jagal, Ahmed Aboelnaga, Mohamed Haider  
<https://pubmed.ncbi.nlm.nih.gov/33116500/>
2. *Investigation of the effect of a time delay on the characteristics and survival of dental pulp stem cells from extracted teeth*, **Journal of Archives of Oral biology (Q1) (IF 3.4)** Smriti Aryal AC, Md Sofiquil Islam, AR Samsudin,  
<https://pubmed.ncbi.nlm.nih.gov/32932148/>
3. *Prevalence of Root Caries among Patients Attending RAKCODS Hospital*, Md Sofiquil Islam, Hiba JI Abu Jarad, Dhabyeh alshehhi, Mohannad Nassar, **Smriti Aryal A C**, Muhammed Mustahsen Rahman. **Sharjah Institute for Medical Research, University of Sharjah, Sharjah, United Arab Emirates & RAK Medical and Health Science University**, (Journal of International Dental and Medical Research, **IF=2**)  
[http://www.jidmr.com/journal/wpcontent/uploads/2020/04/50.D19\\_941\\_Muhammed\\_Mustahsen\\_Rahman\\_Sofiquil\\_Islam\\_UAE6.pdf](http://www.jidmr.com/journal/wpcontent/uploads/2020/04/50.D19_941_Muhammed_Mustahsen_Rahman_Sofiquil_Islam_UAE6.pdf)
4. *Nicotinamide riboside kinase-2 alleviates ischemia-induced heart failure through P38 signaling*. Firdos Ahmad, Dhanendra Tomar, **Smriti Aryal A C**, Adel B Elmoselhi, Manfred Thomas; John W Elrod, Douglas G Tilley, Thomas Force. **Sharjah Institute for Medical Research, University of Sharjah, Molecular Basis of Disease Oct 2019 (IF=4.44)**  
<https://www.sciencedirect.com/science/article/abs/pii/S0925443919303321>
5. *Osteogenesis imperfecta: new genes reveal novel mechanisms in bone dysplasia*. Kang H, **Aryal A C S**, Marini JC, **Trans res 2016 Nov19. (IF= 5.03)**  
<https://www.ncbi.nlm.nih.gov/pubmed/27914223>

6. *Nck influences preosteoblastic/osteoblastic migration and bone mass.* **Aryal A C S**, Miyai K, Izu Y, Hayata T, Notomi T, Noda M, Ezura Y, **Proc Natl Acad Sci (PNAS), USA.** 2015 Dec 15;112(50):15432-7. doi: 10.1073/pnas.1518253112. Epub 2015 Nov 30. **(IF=9.5)**  
<https://www.ncbi.nlm.nih.gov/pubmed/26621720>
7. *Nck1 deficiency accelerates unloading induced bone loss.* **Aryal A.C Smriti**, Kentaro Miyai, Yoichi Ezura, Tadayoshi Hayata, Takuya Notomi, Tetsuya Nakamoto, Tony Pawson and Masaki Noda. **Journal of Cellular Physiology** 2013 Jul;228(7):1397-403. doi: 10.1002/jcp.24317. **(IF=4.08)**  
<https://www.ncbi.nlm.nih.gov/pubmed/23280595>
8. *Profilin1 Is Expressed in Osteocytes and Regulates Cell Shape and Migration.* Lin W Izu Y, **Smriti A**, Kawasaki M, Pawaputanon C, Böttcher RT, Costell M, Moriyama K, Noda M, Ezura Y. **Journal of Cellular Physiology.** 2017 Feb 24. **(IF=4.08)**  
<https://www.ncbi.nlm.nih.gov/pubmed/28233307>
9. *Profilin Expression Is Regulated by Bone Morphogenetic Protein (BMP) in Osteoblastic Cells.* Lin W, Ezura Y, Izu Y, **Aryal A C S**, Kawasaki M, Na Mahasarakham Chantida P, Moriyama K, Noda M. **J Cell Biochem.** 2016 Mar; 117(3):621-8. doi: 10.1002/jcb.25310. **(IF=3.44)**  
<https://www.ncbi.nlm.nih.gov/pubmed/26271366>
10. *Cathepsin K Deficiency Suppresses Disuse-Induced Bone Loss.* Moriya S, Izu Y, **Aryal S**, Kawasaki M, Hata K, Pawaputanon Na Mahasarakham C, Izumi Y, Saftig P, Kaneko K, Noda M, Ezura Y. **J Cell Physiol.** 2016 May;231(5):1163-70. doi: 10.1002/jcp.25214. **(IF=4.08)**  
<https://www.ncbi.nlm.nih.gov/pubmed/26460818>
11. *BMP-2 Enhances Lgr4 Gene Expression in Osteoblastic Cells.* Pawaputanon Na Mahasarakham C, Ezura Y, Kawasaki M, **Smriti A**, Moriya S, Yamada T, Izu Y, Nifuji A, Nishimori K, Izumi Y, Noda M. **J Cell Physiol.** 2015 Sep 2. **(IF=4.08)**  
<https://www.ncbi.nlm.nih.gov/pubmed/26332449>
12. *PTH Regulates  $\beta$ 2-Adrenergic Receptor Expression in Osteoblast-Like MC3T3-E1 Cells.* Shuichi Moriya, Tadayoshi Hayata, Takuya Notomi, **Smriti Aryal**, Testuya Nakamoto, Yayoi Izu, Makiri Kawasaki, Takayuki Yamada, Jumpei Shirakawa, Kazuo Kaneko, Yoichi

Ezura and Masaki Noda. **Journal of Cellular Biochemistry** Vol.116, Issue 1, Pages: 142-148, January **2015**. (IF=3.44)

<https://www.ncbi.nlm.nih.gov/pubmed/25164990>

13.  *$\beta$ 2 Adrenergic receptor activation suppresses BMP-induced alkaline phosphatase expression in osteoblast-like MC3T3E1 cells.* YamadaT, EzuraY, HayataT, MoriyaS, ShirakawaJ, NotomiT, **Aryal S**, Kawasaki M, Izu Y, Harada K, Noda M. **Journal of Cellular Biochemistry** **2014** Dec 23. doi: 10.1002/jcb.25071. (IF=3.44)

<https://www.ncbi.nlm.nih.gov/pubmed/25536656>

14. *Mechano- biology of bone.* Masaki Noda, Yoichi Ezura, Tadayoshi Hayata, Takuya Notomi, Tetsuya Nakamoto, Chiho Watanabe, **Smriti Aryal A.C.** (**Shujunsha cell engineering**) 31 No.9, page 1030-1032, August **2012**) article in Japanese.

## SCIENTIFIC PRESENTATIONS

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### ORAL

1. *Actin cytoskeleton regulators Nck1 and Nck2 are required for supporting osteoblastic migration, bone formation and bone mass under the control of IGF-1 and for suppressing osteoclastic bone loss.* **Smriti Aryal A.C**, Kentaro Miyai, Yoichi Ezura, Tony Pawson, Masaki Noda, **American Society of Bone and Mineral Research (ASBMR) 2015 Annual Meeting, October 9-12, 2015** at Washington State convention Center in Seattle, Washington, **USA**.
2. *Nck Actin cytoskeleton protein, supports osteoblastic bone increment and suppresses osteoclastic bone loss.* **Smriti Aryal A.C**, Kentaro Miyai, Yoichi Ezura, Tadayoshi Hayata, Takuya Notomi, Tetsuya Nakamoto, Tony Pawson, Masaki Noda, **American Society of Bone and Mineral Research (ASBMR) 2011 Annual Meeting, September 16-20, 2011** at San Deigo Convention Center, California, **USA**
3. *Deficiency of Nck, an Actin Cytoskeleton Modulator in the Osteoblast Inhibits Osteoblast Migration and Suppresses Bone Formation.* **Smriti Aryal A.C**, Kentaro Miyai, Yoichi Ezura, Tadayoshi Hayata, Takuya Notomi, Tetsuya Nakamoto, Tony Pawson, Masaki Noda, **Japanese Society of Bone and Mineral Research (JSBMR) 2012 Annual Meeting, July 19-21, 2012** at Keio Plaza Hotel, Shinjuku, Tokyo , **Japan**

## **POSTERS**

1. *Optimizing Post-tooth Extracted Transport Time for Pulp Stem Cell banking*, AB Rani Samsudin, **Smriti Aryal A C**. **CED-IADR/NOF Oral Health Research Congress in Madrid**, (September 19-21, 2019), **Spain**  
[https://www.ced-iadr2019.com/Madrid\\_Abstract\\_BOOK\\_Sept\\_7.pdf](https://www.ced-iadr2019.com/Madrid_Abstract_BOOK_Sept_7.pdf) , abstract no 0152.1
2. *Effect of incubation time on the viability and function of post tooth extracted human dental pulp stem cells* **Smriti Aryal A C**, Amir Ali Khan, AB Rani Samsudin **International Society for Stem cell research (ISSCR) 2019 Annual Meeting**, Los Angeles, CA, **USA**  
<https://www.eventscribe.com/2019/ISSCR/fsPopup.asp?efp=U1RUQUZKWF11NjIw&PosterID=207667&rnd=0.3841292&mode=posterinfo>
3. *Murine model for type VI OI (Serpinf1-/-) reveals dynamic regulation of vascularization and mineralization in bone*. Heeseog Kang, **Smriti Aryal A.C**, Valentin David, Aline Martin, Susan Crawford, Joan Marini.  
[http://www.oio2017.org/wpcontent/uploads/2017/08/Abstractbook\\_final.pdf](http://www.oio2017.org/wpcontent/uploads/2017/08/Abstractbook_final.pdf)
4. *Deficiency of Nck in the osteoclast exacerbates aging-induced osteoporosis*. **Smriti Aryal A. C**, Yoichi Ezura, Yayoi Izu, Tadayoshi Hayata, Islam MS, Masaki Noda **Eunice Kennedy Shriver National Institute of Child and Human Development, 12th annual retreat meeting 2016, April 22** at National Museum of the American Indian (NMAI), Washington DC, **USA**
5. *Nck, an actin cytoskeleton modulator, controls expression of osteocytic genes, phosphate homeostasis by regulating FGF 23 expression in bone and maintains bone mass*. **Smriti Aryal A.C**, Kentaro Miyai, Yoichi Ezura, Tadayoshi Hayata, Takuya Notomi, Tony Pawson, Masaki Noda, **American Society of Bone and Mineral Research (ASBMR) 2012 Annual Meeting, October 12-15** at Minneapolis, Minnesota, **USA**
6. *Actin cytoskeletal modulator Nck1 influences MC3T3-E1 osteoblast cell motility and migration ability*. **Smriti Aryal A.C**, Kentaro Miyai, Yoichi Ezura, Tadayoshi Hayata, Takuya Notomi, Tetsuya Nakamoto, Tony Pawson, Masaki Noda. **Harvard University Student Research Day April 12th 2011, Harvard School of Dental Medicine**, Longwood Ave, Boston, **USA**

7. *Nck1*, a molecular adaptor prerequisite for cell motility, is stimulated by bone morphogenetic protein and contributes to maintain bone mass. **Smriti Aryal A.C**, Kentaro Miyai, Yoichi Ezura, Tadayoshi Hayata, Tony Pawson, Masaki Noda, **American Society of Bone and Mineral Research (ASBMR) 2010 annual meeting, October 15-19**, Metro Toronto Convention Centre, Toronto, **Canada**.