

Accepted Manuscript

Full length article

Bone matrix development in steroid-induced osteoporosis is associated with a consistently reduced fibrillar stiffness linked to altered bone mineral quality

L. Xi, P. De Falco, E. Barbieri, A. Karunaratne, L. Bentley, C.T. Esapa, N.J. Terrill, S.D.M. Brown, R.D. Cox, G.R. Davis, N.M. Pugno, R.V. Thakker, H.S. Gupta

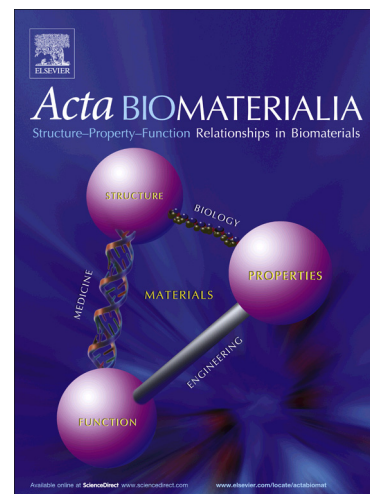
PII: S1742-7061(18)30332-5
DOI: <https://doi.org/10.1016/j.actbio.2018.05.053>
Reference: ACTBIO 5506

To appear in: *Acta Biomaterialia*

Received Date: 27 February 2018
Revised Date: 14 May 2018
Accepted Date: 31 May 2018

Please cite this article as: Xi, L., De Falco, P., Barbieri, E., Karunaratne, A., Bentley, L., Esapa, C.T., Terrill, N.J., Brown, S.D.M., Cox, R.D., Davis, G.R., Pugno, N.M., Thakker, R.V., Gupta, H.S., Bone matrix development in steroid-induced osteoporosis is associated with a consistently reduced fibrillar stiffness linked to altered bone mineral quality, *Acta Biomaterialia* (2018), doi: <https://doi.org/10.1016/j.actbio.2018.05.053>

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.



Bone matrix development in steroid-induced osteoporosis is associated with a consistently reduced fibrillar stiffness linked to altered bone mineral quality

L. Xi^{a,b}, P. De Falco^{a,h}, E. Barbieri^{a,k}, A. Karunaratne^c, L. Bentley^d, C.T. Esapa^{d,e}, N.J. Terrill^f, S.D.M. Brown^d, R.D. Cox^d, G.R. Davis^g, N. M. Pugno^{i,a,j}, R.V. Thakker^{d,e}, H.S. Gupta^{a,*}

- a School of Engineering and Material Sciences, Queen Mary University of London, London, E1 4NS, UK
- b Department of Nuclear Engineering, North Carolina State University, Raleigh, NC, 27607, USA
- c Department of Mechanical Engineering, University of Moratuwa, Sri Lanka
- d MRC Mammalian Genetics Unit and Mary Lyon Centre, MRC Harwell, Harwell Science and Innovation Campus, OX11 0RD, UK
- e Academic Endocrine Unit, Nuffield Department of Clinical Medicine, Oxford Centre for Diabetes, Endocrinology and Metabolism (OCDEM), University of Oxford, Churchill Hospital, Headington, Oxford, OX3 7JL, UK
- f Beamline I22, Diamond Light Source Ltd., Diamond House, Harwell Science and Innovation Campus, Chilton, Didcot, Oxfordshire, OX11 0DE, United Kingdom
- g Queen Mary University of London, Barts and the London School of Medicine and Dentistry, Institute of Dentistry, E1 2AD, UK
- h Department of Biomaterials, Max Planck Institute of Colloids and Interfaces, D-14424 Potsdam-Golm, Germany
- i Laboratory of Bio-Inspired & Graphene Nanomechanics, Department of Civil, Environmental and Mechanical Engineering, University of Trento, Via Mesiano, 77, 38123, Trento, Italy
- j Ket Lab, Edoardo Amaldi Foundation, Italian Space Agency, Via del Politecnico snc, 00133, Rome, Italy
- k Department of Mathematical Science and Advanced Technology (MAT), Yokohama Institute for Earth Sciences (YES) 3173-25, Showa-machi, Kanazawa-ku, Yokohama-city, Japan

E-mail addresses: xili1990@outlook.com (L. Xi), p.defalco@qmul.ac.uk (P. De Falco), e.barbieri@jamstec.go.jp (E. Barbieri), anjelo100@gmail.com (A. Karunaratne), l.bentley@har.mrc.ac.uk (L. Bentley), c.esapa@har.mrc.ac.uk (C.T. Esapa), nick.terrill@diamond.ac.uk (N.J. Terrill), s.brown@har.mrc.ac.uk (S.D.M. Brown), r.cox@har.mrc.ac.uk (R.D. Cox), g.r.davis@qmul.ac.uk (G.R. Davis), nicola.pugno@unitn.it (N. M. Pugno), rajesh.thakker@ndm.ox.ac.uk (R.V. Thakker), h.gupta@qmul.ac.uk (H.S. Gupta).

Correspondence author: Himadri S. Gupta, h.gupta@qmul.ac.uk

School of Engineering and Materials Sciences and Institute of Bioengineering,
Queen Mary University of London,
Mile End Road,
London
E1 4NS, UK
Tel: +44(0)20 7882 8867

Download English Version:

<https://daneshyari.com/en/article/6482772>

Download Persian Version:

<https://daneshyari.com/article/6482772>

[Daneshyari.com](https://daneshyari.com)