UNIVERSITY OF BIRMINGHAM

University of Birmingham Research at Birmingham

Clinical Connections

Nanus, Dominika; Wijesinghe, Susanne; Pearson, Mark; Hadjicharalambous, Marina R.; Rosser, Alex; Davis, Edward; Lindsay, Mark; Jones, Simon

DOI:

10.1002/art.40957

License:

Other (please specify with Rights Statement)

Document Version
Peer reviewed version

Citation for published version (Harvard):

Nanus, D, Wijesinghe, S, Pearson, M, Hadjicharalambous, MR, Rosser, A, Davis, E, Lindsay, M & Jones, S 2020, 'Clinical Connections: regulation of the inflammatory synovial fibroblast phenotype by metastasis-associated lung adenocarcinoma transcript 1 long noncoding RNA in obese patients with osteoarthritis', *Arthritis and Rheumatology*, vol. 72, no. 4, pp. A16-A16. https://doi.org/10.1002/art.40957

Link to publication on Research at Birmingham portal

Publisher Rights Statement:

This is the peer reviewed version of the following article: (2020), Clinical Connections. Arthritis Rheumatol, 72:. doi:10.1002/art.40957, which has been published in final form at: https://doi.org/10.1002/art.40957. This article may be used for non-commercial purposes in accordance with Wiley Terms and Conditions for Use of Self-Archived Versions.

General rights

Unless a licence is specified above, all rights (including copyright and moral rights) in this document are retained by the authors and/or the copyright holders. The express permission of the copyright holder must be obtained for any use of this material other than for purposes permitted by law.

- $\bullet \textsc{Users}$ may freely distribute the URL that is used to identify this publication.
- •Users may download and/or print one copy of the publication from the University of Birmingham research portal for the purpose of private study or non-commercial research.
- •User may use extracts from the document in line with the concept of 'fair dealing' under the Copyright, Designs and Patents Act 1988 (?)
- •Users may not further distribute the material nor use it for the purposes of commercial gain.

Where a licence is displayed above, please note the terms and conditions of the licence govern your use of this document.

When citing, please reference the published version.

Take down policy

While the University of Birmingham exercises care and attention in making items available there are rare occasions when an item has been uploaded in error or has been deemed to be commercially or otherwise sensitive.

If you believe that this is the case for this document, please contact UBIRA@lists.bham.ac.uk providing details and we will remove access to the work immediately and investigate.

Download date: 14. May. 2024

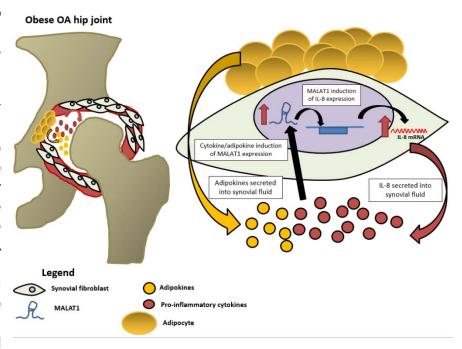
Regulation of the Inflammatory Synovial Fibroblast Phenotype by MALAT 1 LncRNA in Obese Patients with Osteoarthritis

Summary:

Inflammation and enlargement of the synovium (synovitis) is a central pathological feature of osteoarthritis (OA). Nanus et al find synovitis is greater in hip OA patients who are obese, where the synovial fibroblast cells (SF) exhibit an inflammatory phenotype with increased production of pro-inflammatory cytokines such as interleukin-6 (IL-6) and C-X-C Motif Chemokine Ligand 8 (CXCL8), compared to either normal weight OA individuals or non-disease controls.

The inflammatory synovial fibroblast phenotype is associated with the expression of specific long non-coding RNAs (IncRNAs), a new class of gene regulators. The IncRNA MALAT1 is

rapidly produced in OA SF cells in response to inflammatory stimulation with proinflammatory cytokines. Inhibition of MALAT1 reduces the rate of SF cell arowth and decreases the production and release of inflammatory proteins. These demonstrate findings that obese hip patients have an inflammatory synovial fibroblast phenotype MALAT1 and that IncRNA is a central



regulator in mediating synovitis in OA patients who are obese.

Key Points:

- Synovial fibroblasts from obese OA patients have an inflammatory phenotype
- The inflammation-associated IncRNA MALAT1 is highly abundant in obese OA synovial fibroblasts and is rapidly produced in response to inflammatory cytokine stimulation
- Inhibition of MALAT1 reduces the synovial fibroblast inflammatory phenotype by inhibiting the production of inflammatory cytokines
- Targeted inhibition of MALAT1 could be a therapeutic approach to reducing synovitis in obese OA patients