

Reply to: Aromatic hydrocarbon receptor provides a link between smoking and rheumatoid arthritis in peripheral blood mononuclear cells: a commentary

Sirs,

We thank Dr Lingyan Zhou *et al.* for their interest in our publication “Aromatic hydrocarbon receptor provides a link between smoking and rheumatoid arthritis in peripheral blood mononuclear cells” (1). It was generally known that cytochrome P4501A1 (CYP1A1) and AHR repressor (AHRR) were characteristic factors responsive to AHR activation (2, 3), the mRNA expression levels of AHR downstream gene (AHRR and CYP1A1) by RT-PCR could reflect the activation of AHR although the western blot and flow cytometry were not used in our experiment. In fact, in our previous studies, we used flow cytometry to detect the ratio of ARH positive cells for different research purposes (4). The issue regarding the association of ESR, CRP, DAS28 score, anti-CCP antibodies and AHR had been

discussed and the results had been previously published (4, 5), and no correlation was found between the indicators above and AHR expression. As Zhou *et al.* noted that multiple inflammatory factors like IL-6, TNF- α , IL-17 might play crucial roles in RA. However, the patients of RA included in our study were in stable condition, so it made little sense to analyse the associations of inflammatory factor and AHR in the study. Maybe further studies are needed to include the patients of different disease activities to certify the relationship.

LIN CHENG
LONG QIAN

*Department of Rheumatology and Immunology,
the Second Affiliated Hospital of Anhui Medical
University, Hefei, China.*

Please address correspondence to:

Dr Qian Long,

*Department of Rheumatology and Immunology,
The Second Hospital of Anhui Medical
University, 678 Furong Road, Hefei 230601,
Anhui, China.*

E-mail: longqian0551@163.com

Competing interests: none declared.

© Copyright CLINICAL AND
EXPERIMENTAL RHEUMATOLOGY 2020.

References

1. CHENG L, QIAN L, XU ZZ *et al.*: Aromatic hydrocarbon receptor provides a link between smoking and rheumatoid arthritis in peripheral blood mononuclear cells. *Clin Exp Rheumatol* 2019; 37: 445-49.
2. FUNATAKE CJ, MARSHALL NB, STEPPAN LB *et al.*: Cutting edge: activation of the aryl hydrocarbon receptor by 2,3,7,8-tetrachlorodibenzo-p-dioxin generates a population of CD4⁺ CD25⁺ cells with characteristics of regulatory T cells. *J Immunol* 2005; 175: 4184-88.
3. MIMURA J, EMA M, SOGAWA K *et al.*: Identification of a novel mechanism of regulation of Ah (dioxin) receptor function. *Genes Dev* 1999; 13: 20-25.
4. CHENG L, QIAN L, TAN Y *et al.*: Unbalanced expression of aryl hydrocarbon receptor in peripheral blood CCR6⁺CD4⁺ and CD4⁺CD25⁺T cells of rheumatoid arthritis. *Rev Bras Reumatol Engl Ed* 2017; 57: 190-96.
5. CHENG L, QIAN L, WANG GS *et al.*: Genetic association of aromatic hydrocarbon receptor and its repressor gene polymorphisms with risk of rheumatoid arthritis in Han Chinese populations. *Medicine (Baltimore)* 2017; 96: e6392.