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**Authors reply:**

## **Platelet inhibitors influence cardioprotection: importance in preclinical study design**

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We would like to thank Professors Cohen and Downey for highlighting platelet inhibitors, in particular platelet P2Y12 receptor antagonists, as an important confounder to take into consideration in preclinical studies designed to study novel cardioprotective strategies against ischemia/reperfusion injury. As already mentioned in our recent publication from the ESC working group, both clinical and animal studies give evidence that platelet inhibitors reduce myocardial infarct size by mechanisms that may involve nitric oxide or adenosine.<sup>1-3</sup> Over the past few years, Cohen and Downey have published strong and convincing evidence suggesting that additional protection cannot be afforded with pharmacological and/or mechanical protective strategies sharing the same pro-survival signaling pathways as the P2Y12 antagonist (see review<sup>3</sup>). Therefore, we fully share their point of view that the effect of co-medication with P2Y12 antagonists or with any other medications frequently given to ischemic heart disease patients (e.g. aspirin, statins, ACE inhibitors, beta blockers, etc)<sup>1</sup> on cardioprotective therapies needs to be tested in preclinical settings prior to translation to clinical cardioprotection as also recently reviewed in detail by Ferdinandy et al.<sup>4</sup>

1. Lecour S, Bøtker HE, Condorelli G, Davidson SM, Garcia-Dorado D, Engel FB, Ferdinandy P, Heusch G, Madonna R, Ovize M, Ruiz-Meana M, Schulz R, Sluijter JPG, Van Laake LW, Yellon DM, Hausenloy DJ. ESC Working Group Cellular Biology of the Heart: Position paper: improving the preclinical assessment of novel cardioprotective therapies. *Cardiovasc Res* 2014;**104**:399-411
2. Roubille F, Lairez O, Newton N, Rioufol G, Ranc S, Sanchez I, Cung TT, Elbaz M, Piot C, Ovize M. Cardioprotection by clopidogrel in acute ST-elevated myocardial infarction patients: a retrospective analysis. *Basic Res Cardiol* 2012;**107**:275.
3. Cohen MV, Downey JM. Combined cardioprotectant and antithrombotic actions of platelet P2Y12 receptor antagonists in acute coronary syndrome: just what the doctor ordered. *J Cardiovasc Pharmacol Ther* 2014;**19**:179-190
4. Ferdinandy P, Hausenloy DH, Heusch G, Baxter GF, Schulz R. Interaction of risk factors, comorbidities and comedications with ischemia/reperfusion injury and cardioprotection by preconditioning, postconditioning, and remote conditioning. *Pharmacol Rev* 2014; 66(4): 1142-1174.