**Approaches towards the Synthesis of Novel Lipoxin Analogues**

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Lipoxins are a group of biologically active mediators derived from arachidonic acid through the action of lipoxygenase enzyme systems.[1] Lipoxins are conjugated tetraene-containing eicosanoids and recent results suggest that they are associated with human disease by modulating cellular events in several physiological systems. Lipoxin A4 (LXA4) (**1**) and lipoxin B4 (LXB4) (**2**) are the two prime molecular targets of pharmacological interest. LXA4 has been identified in bronchoalveolar lavage cells while a defect in LXA4 production is observed in cells from patients with chronic myeloid leukaemia.[2, 3] In light of the activity associated with this relatively new class of biological regulators, their synthesis has already been investigated by a number of groups worldwide. This work has helped to elucidate the absolute stereochemistry of these naturally occurring compounds.[4]



This project focuses on the total synthesis of analogues of LXA4 which retain the biological activity of (**1**) but are significantly more resistant to metabolic transformation and resultant deactivation. Accordingly, analogues of this type should be efficacious for longer periods and have wider pharmacological application. Presented here is a summary of our work to date, namely the development of a versatile synthetic route incorporating a highly convergent palladium-mediated Heck reaction.[5]

**References:**

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