**Some Valuable Pharmaceutical Intermediates by Pd Catalyzed Heck and Hydrogenation Processes**

**S. Paganelli a, O. Piccolob, V.D. Rathoda**

*aDipartimento di Scienze Molecolari e Nanosistemi, Università Ca’ Foscari Venezia, via Torino 155, 30172 Venezia Mestre, Italy.*

 *bStudio di Consulenza scientifica, Via Bornò 5, 23896 Sirtori (LC), Italy.*

e-mail: spag@unive.it

Eletriptan hydrobromide [Brand name: RELPAX® (RELERT ®)] is a second generation triptan drug intended for treatment of migraine headaches1. Cinacalcet hydrochloride (brand name: Sensipar® in USA and Mimpara® in Europe) is a calcium sensing receptor agonist used to treat secondary hyperparathyroidism2. Recently we studied greener and more sustainable syntheses of these two APIs and here we report the results obtained in the preparation of two valuable intermediates, **I** (Eletriptan base) and **II** (3-(3-trifluoromethylphenyl)propanal), respectively, both involving similar reaction steps, i.e. a Heck cross-coupling reaction followed by a carbon-carbon hydrogenation reaction. Intermediate **I** was prepared by: 1) Heck reaction catalyzed by commercially available homogeneous Pd catalysts and the best results were obtained by using bis(dibenzylideneacetone)palladium(0) in the presence of tri-o-tolylphosphine or bis(tri-o-tolylphosphine) palladium(0) in cyclopentylmethylether or bis(tri-tert-butylphosphine)palladium(0) in acetonitrile; 2) the subsequent hydrogenation process was carried out, at the best, in the presence of the low metal content home-made recyclable heterogeneous catalyst Pd/Al2O3 0.28%. For the syntheses of **II** a cascade process under conventional, as well as microwave-assisted conditions, was developed. The Heck reaction, catalyzed by Pd(OAc)2 in the presence of nBu4N+AcO-, was carried out in green solvents as -valerolactone or Me-THF; the subsequent hydrogenation was efficiently catalyzed by the same catalyst of the Heck process. At the end of the reaction, Pd species were recovered by simply adsorption on alumina.



**References**

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