

The Importance of Catalysts for a Healthy Life

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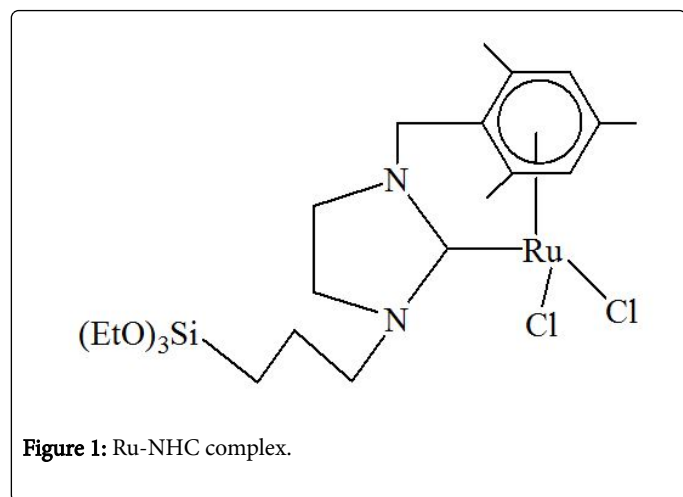
Received: October 14, 2016; Accepted: October 20, 2016; Published: October 27, 2016

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Citation: Kilincarslan R (2016) The Importance of Catalysts for a Healthy Life. Occup Med Health Aff 4: 250. doi:10.4172/2329-6879.1000250

Letter to Editor

Recently, it has begun to turn to cleaner technologies with the development of environmental awareness all over the world. This orientation was intensified efforts to minimize the level of waste in the industry. Use of catalyst for lowering the minimum level of waste is an important place. The aim of the clean technology is to increase the efficiency and selectivity catalyst used. Also, it led to isolation of the product from the catalyst to economical way. At least one metal-carbon bond which is defined as the chemistry of compounds containing organometallic chemistry is a very rapidly developing science because of the removing the boundaries between organic and inorganic chemistry and also the direct relationship with the catalysts. Homogeneous catalysts have advantages over heterogeneous catalysts. These advantages, it can be summarized as its low production costs due to take place under relatively mild conditions of the reaction; be selectivity of reaction and do not by-product; can be made fine adjustments on the catalyst which known structure (Figure 1).



N-heterocyclic carbenes (NHCs) have known as construction supply for coordination compounds [1]. Metal-NHC complexes have recently attracted considerable attention as possible alternatives for the widely used phosphine complexes in homogeneous catalysis. Because, P-C bond can easily be cleaved at catalytic conditions and P atom is easily was oxidized with oxygen of the air. In contrast, metal-NHC

complexes are very stable toward moisture and oxygen of air. Consequently, excess ligands are no use in reaction conditions. In the metal-carbene complexes, silver-NHC complexes have received special attention due to their structural diversity, wide application as effective carbene transfer agents in trans-metalation reactions to make other NHC-metal complexes [2-8]. Also, the prominent biological activity of NHC-silver complexes as anticancer and antimicrobial agents has been confirmed [9-11].

References

1. Bourissou D, Guerret O, Gabbai FP, Bertrand G (2000) Stable carbenes. *Chem Rev* 100: 39-92.
2. Anna VR, Pallegogu R, Zhou ZY, Kollipara MR (2012) Novel platinum group metal complexes bearing bidentate chelating pyrimidyl-NHC and pyrimidyl imidazolyl-thione ligands: Syntheses, spectral and structural characterization. *Inorg Chim Acta* 387: 37-44.
3. Lin IJB, Vasam CS (2007) Preparation and application of N-heterocyclic carbene complexes of Ag(I). *Coord Chem Rev* 251: 642-670.
4. Coleman KS, Chamberlayne HT, Turberville S, Gren MLH, Cowley AR (2003) Silver(I) complex of a new imino-N-heterocyclic carbene and ligand transfer to palladium(II) and rhodium(I). *Dalton Trans* 32: 2917-29223.
5. Liu QX, Zhao LX, Zhao XJ, Zhao ZX, Wang ZQ, et al. (2013) Silver(I), palladium(II) and mercury(II) NHC complexes based on bis-benzimidazole salts with mesitylene linker: Synthesis, structural studies and catalytic activity. *J Organomet Chem* 731: 35-48.
6. Herrmann WA, Schneider SK, Ofele K, Sakamoto M, Herdtweck E (2004) First silver complexes of tetrahydropyrimid-2-ylidenes. *J Organomet Chem* 689: 2441-2449.
7. Wang HMJ, Lin IJB (1998) Facile synthesis of silver(I)-carbene complexes. Useful carbene transfer agents. *Organometallics* 17: 972-975.
8. Wang JW, Song HB, Li QS, Xu FB, Zhang ZZ (2005) Macrocyclic dinuclear gold(I) and silver(I) NHCs complexes. *Inorg Chim Acta* 358: 3653-3658.
9. Kascatan-Nebioglu A, Panzner MJ, Tessier CA, Cannonb CL, Youngs WJ (2007) N-Heterocyclic carbene-silver complexes: A new class of antibiotics. *Coord Chem Rev* 251: 884-895.
10. Siciliano TJ, Deblock MC, Hindi KM, Durmus S, Panzner MJ, et al. (2011) Synthesis and anticancer properties of gold(I) and silver(I) N-heterocyclic carbene complexes. *J Organomet Chem* 696: 1066-1071.
11. Wright BD, Shah PN, McDonald LJ, Shaeffer ML, Wagers PO, et al. (2012) Synthesis, characterization, and antimicrobial activity of silver carbene complexes derived from 4,5,6,7-trichlorobenzimidazole against antibiotic resistant bacteria. *Dalton Trans* 41: 6500-6506.