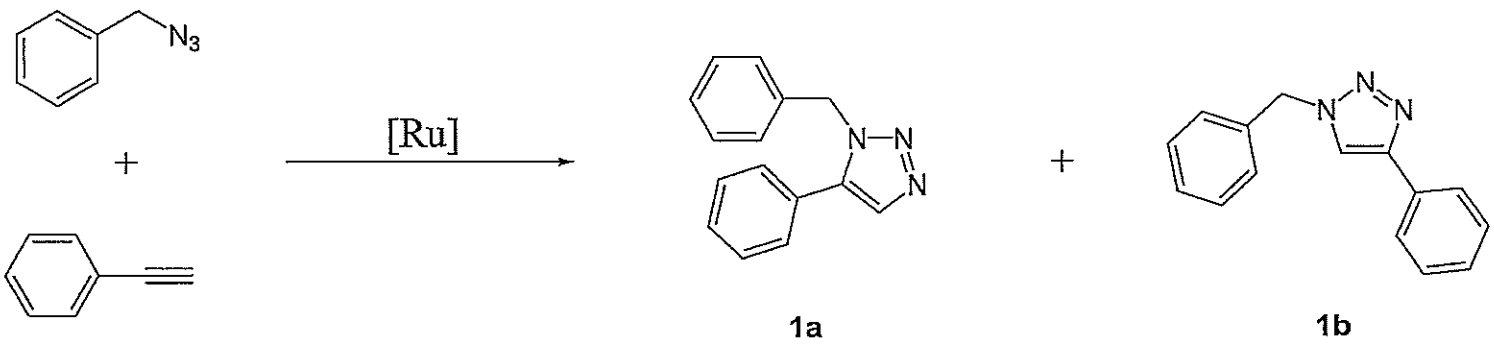



| | 1a | 1b |
|---|---|---|
| $Ru(OAc)_2(PPh_3)_2$ | | 100% |
| $CpRuCl(PPh_3)_2$ | 85% | 15% |
| $Cp^*RuCl(PPh_3)_2$ | 100% | |
| $Cp^*RuCl(NBD)$ | 100% | |

**Figure 1**

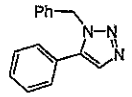
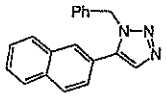
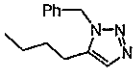
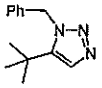
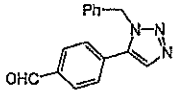
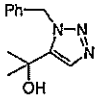
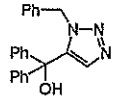
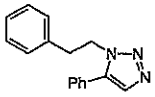
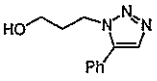
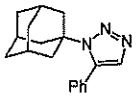
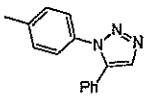
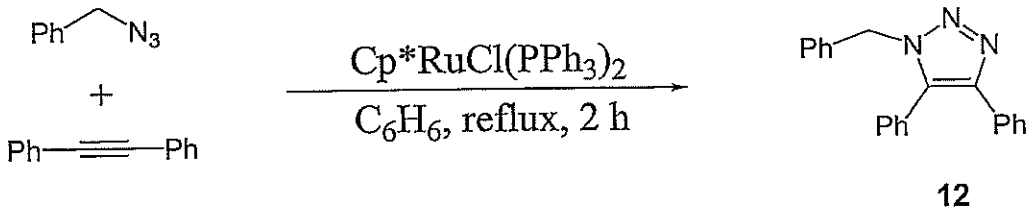
| Entry | Product | | Reaction time, n | yield, % |
|---|---|---|---|---|
| 1 |  | **1a** | 2 | 80 |
| 2 |  | **2a** | 4 | 93 |
| 3 |  | **3a** | 3 | 82 |
| 4 |  | **4a** | 4 | 82 |
| 5 |  | **5a** | 2 | 81 |
| 6 |  | **6a** | 2.5 | 94 |
| 7 |  | **7a** | 4 | 87 |
| 8 |  | **8a** | 2 (THF, 60 °C) | 89 |
| 9 |  | **9a** | 2 (THF, 60 °C) | 82 |
| 10 |  | **10a** | 12 (THF, 60 °C) | 54 |
| 11 |  | **11a** | 6 (THF, 60 °C) | 32 |

**Figure 2**




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**Figure 3**

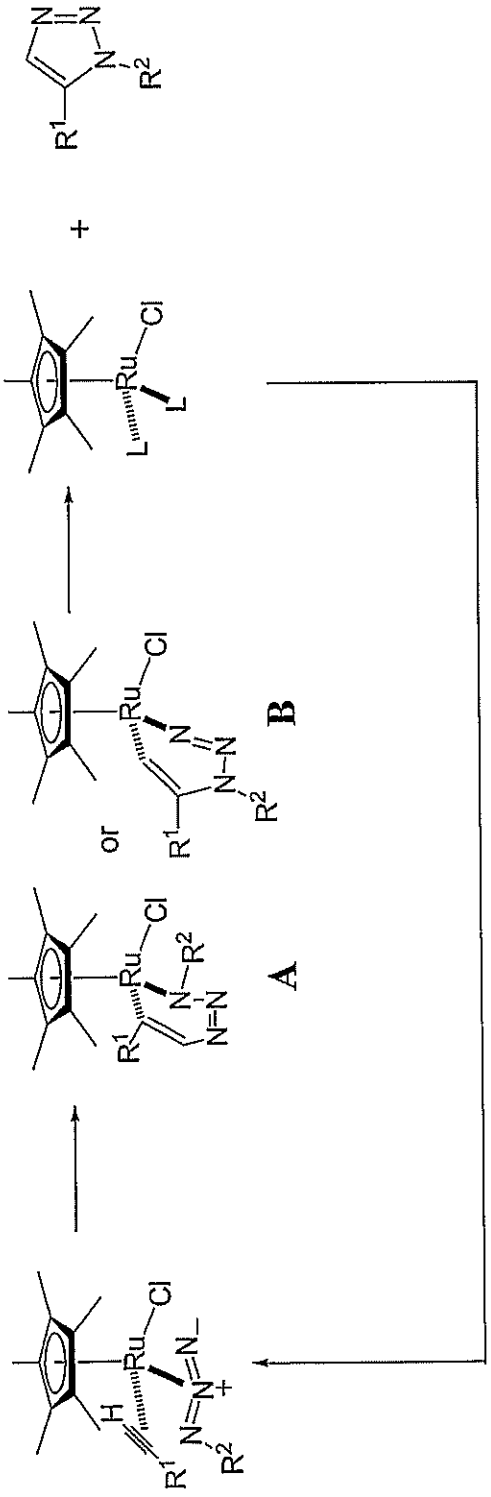



Figure 4

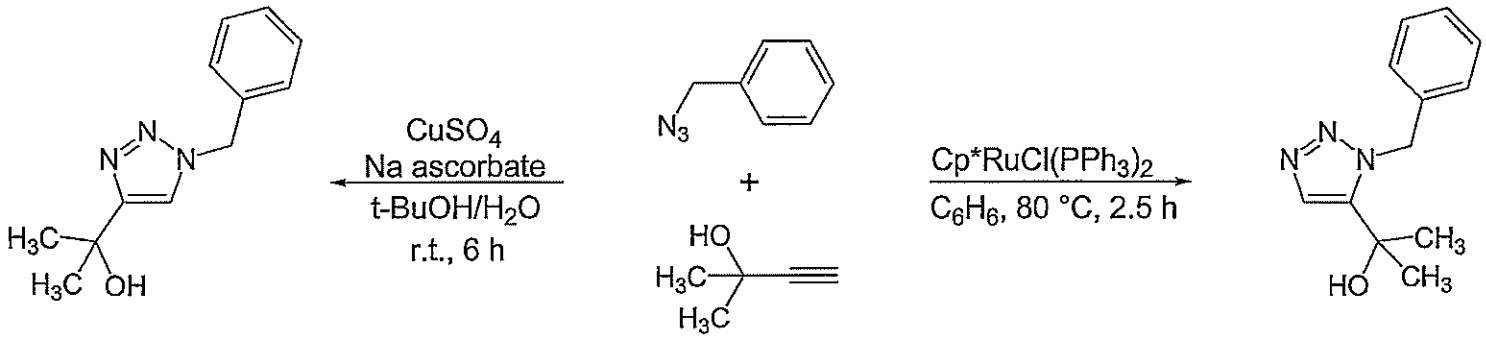

CuSO4
Na ascorbate
t-BuOH/H2O
r.t., 6 h
Cp*RuCl(PPh3)2
C6H6, 80 °C, 2.5 h
1,4-regioisomer, 92%
1,5-regioisomer, 94%

**Figure 5**