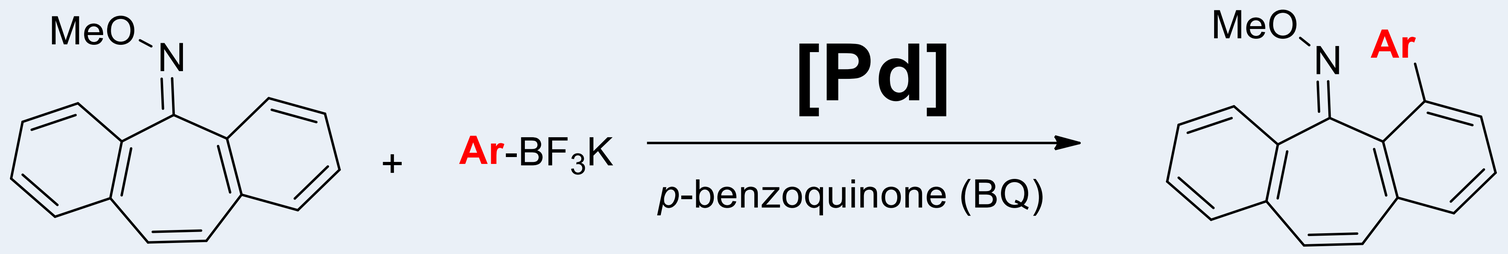
二價鈀金屬催化鄰位碳-氫鍵活化/芳香基化合成二苯并環庚烯酮之衍生物

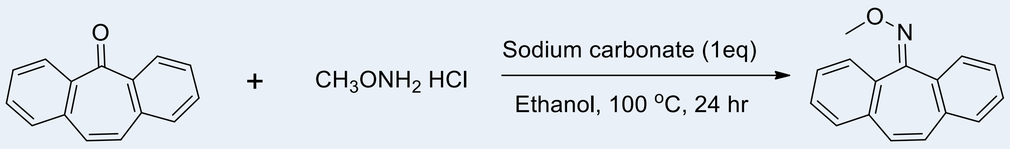
摘要

探討藉由鈀金屬催化二苯并環庚烯酮（ Dibenzosuberenone ）之鄰位碳-氫鍵活化/芳香基化反應來製備一系列 Dibenzosuberenone 衍生物。透過反應條件篩選找出此反應之最佳反應條件，並對於此反應作機制探討研究。



結果與討論

合成以 *O*-methyl oximyl 作為導向基團之 Dibenzosuberenone 起始物



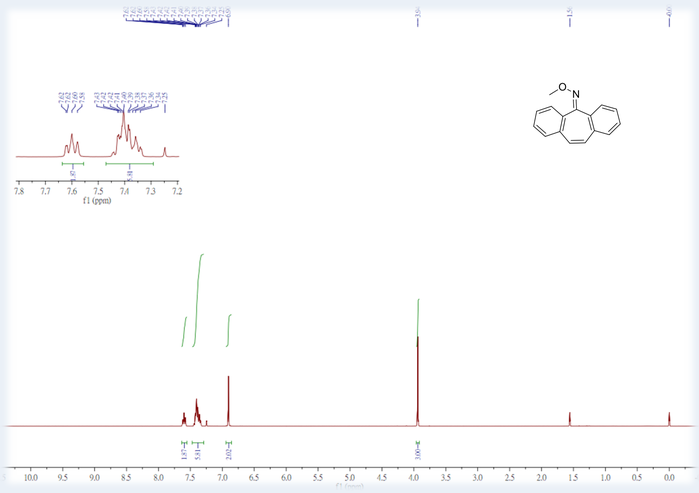
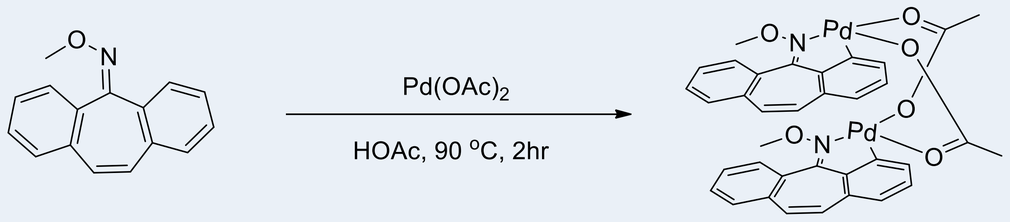


圖1 ^{1}H-NMR 光譜圖 (400 MHz, $CDCl_3$)

中間體製備



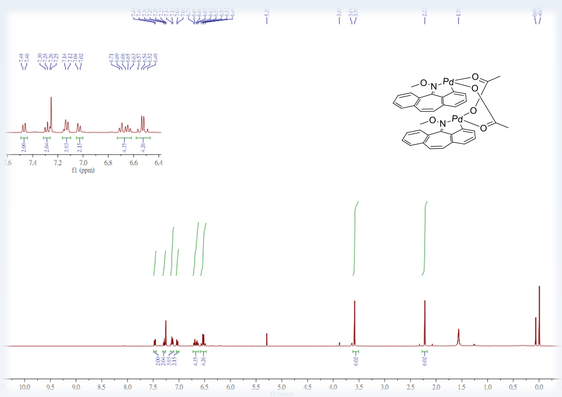


圖2. ^{1}H-NMR 光譜圖 (400 MHz, $CDCl_3$)

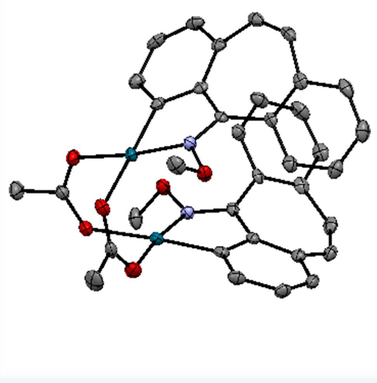
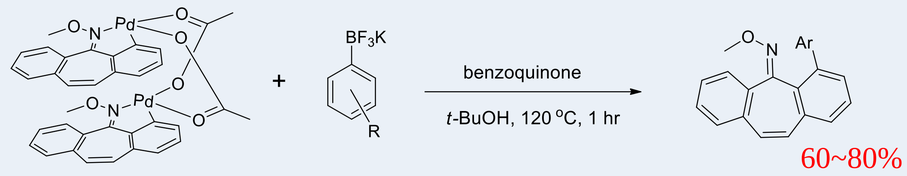
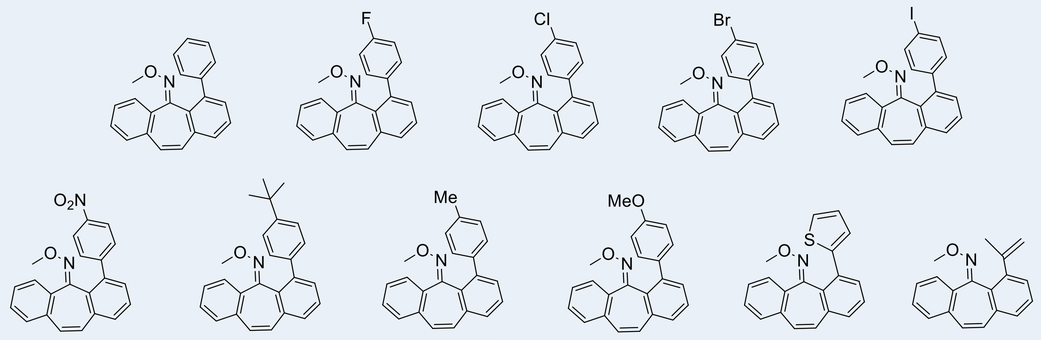


圖3. X-ray 晶體結構圖

Dibenzosuberenone之芳香基化





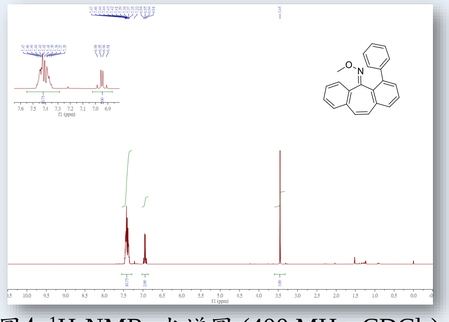


圖4 ^{1}H-NMR 光譜圖 (400 MHz, $CDCl_3$)

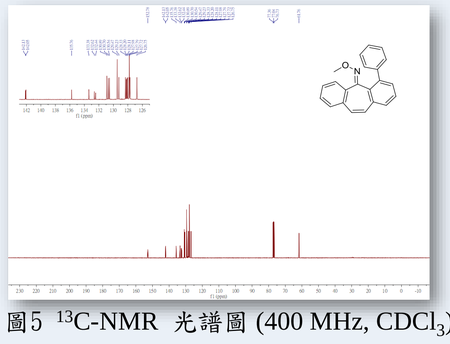


圖5 ^{13}C-NMR 光譜圖 (400 MHz, $CDCl_3$)

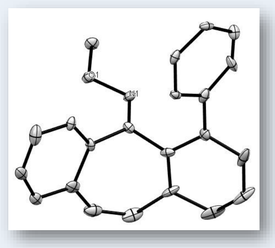
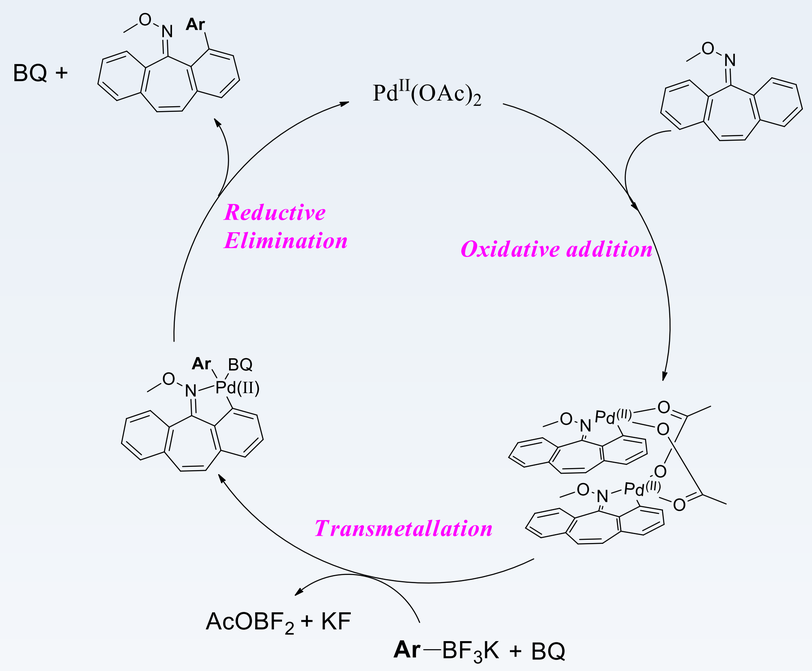


圖6. X-ray 晶體結構圖

可能反應機制



結論

本研究成功開發利用鈀金屬催化二苯并環庚烯酮與芳香基硼酸鉀進行鄰位 C – H 鍵活化/芳香反應建構一系列二苯并環庚烯酮之衍生物；鈀金屬中間體最後藉由 NMR 及 X-ray 光譜鑑定確認其結構。

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