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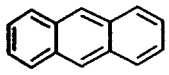
9′,10′–ไดไฮโดร-5-โบรโม-สไปโร[3-ไซโคลเพนทีน-1,11′-(9,10)- อีธาโนแอนทราซีน]-2-โอน (15) สามารถสังเคราะห์จากปฏิกิริยาของแอนทราซีน (8) และเมธิลอะครีเลท (9) โดยปฏิกิริยาดีลส์-อัลเดอร์ ซึ่งจะได้โมโนเอสเทอร์แอดดัก (10) ปฏิกิริยาอัลคิลเลชันของโมโนเอสเทอร์แอดดัก (10) กับอัลลิลโบรไมด์ (11) จะให้อัลลิลเอสเทอร์แอดดัก (12) ซึ่งจะถูกทำการปิดวงได้สารผสมสองชนิดของสไปโรคีโตนแอดดัก (13a) และ (13b) ปฏิกิริยาของ (13a) กับ *เอน*-โบรโมซัคซินิไมด์ (14) จะได้ผลิตภัณฑ์สุดท้าย (15)



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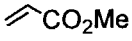

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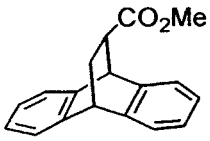

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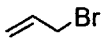

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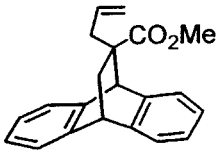

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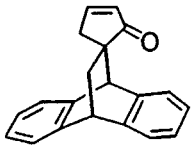
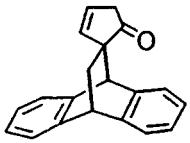
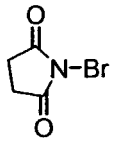


(13a)



(13b)



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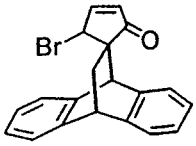
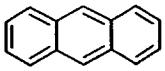


(15)

ABSTRACT

180312

9′,10′-Dihydro-5-bromo-spiro[3-cyclopenten-1,11′-(9,10)-ethanoanthracene]-2-one (15) could be synthesized by the reaction of anthracene (8) and methyl acrylate (9), via Diels-Alder reaction, to obtain the mono ester adduct (10). Alkylation of this mono ester adduct (10) with allyl bromide (11) gave the allyl ester adduct (12), which was then cyclised to give a mixture of the two spiro ketone adducts (13a) and (13b). Reaction of (13a) with *N*-bromosuccinimide (14) gave the final product (15).



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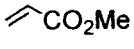

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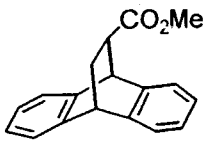
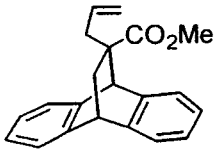


(10)

(11)



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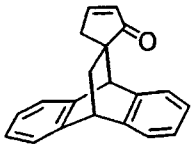
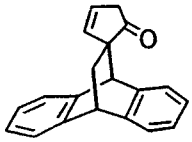


(13a)



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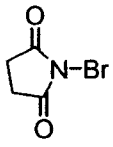

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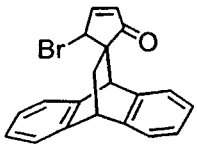

(15)