

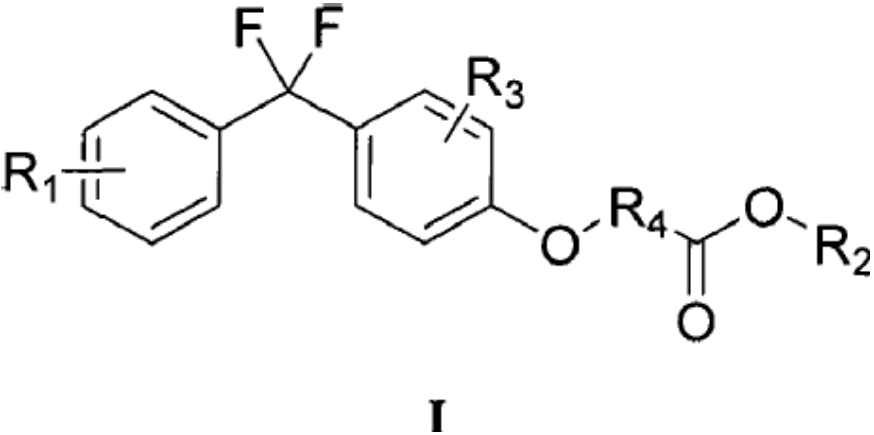


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【発明の名称】 4-((取代苯基)二氟甲基)苯氧基羧酸衍生物及其制备方法和医药用途

【要約】

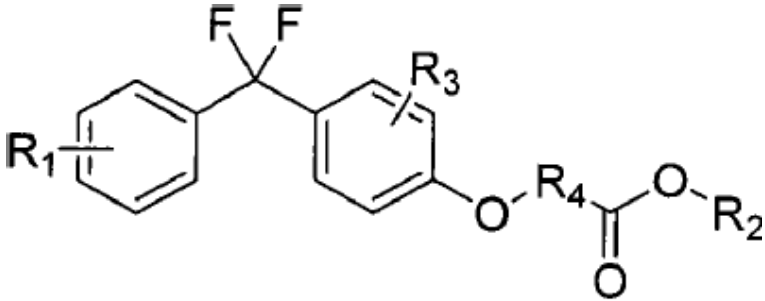
本发明公开了一种4-((取代苯基)二氟甲基)苯氧基羧酸衍生物及其制备方法和医药用途。更具体地说,本发明涉及如下结构所示的式I化合物,其定义见说明书。本发明化合物可作为PAR激动剂,显示出有较强的降低血浆中总胆固醇(TC)、甘油三酯(TG)和低密度脂蛋白胆固醇(LDL-C)水平的作用,因此本发明化合物可用于治疗或预防高血脂症或因高血脂引发的心脑血管疾病,如糖尿病、动脉粥样硬化、脑中风、冠心病等疾病。本发明还涉及制备式I化合物的新中间体化合物的制备方法。



【請求の範囲】

【請求項1】

1.式I化合物4-((取代苯基)二氟甲基)苯氧基羧酸衍生物,或其药学上可接受的盐或其溶剂化物;



I

其中,

R₁是氢、氟、氯、溴、三氟甲基、取代或未取代的直链或支链C1-C6烷氧酰基、取代或未取代的C6-C10芳氧酰基、取代或未取代的直链或支链的C1-C6烷基、取代或未取代的C6-C10芳基、取代或未取代的直链或支链的C1-C6烷氧基、取代或未取代的C6-C10芳氧基、取代或未取代的直链或支链的C1-C6烷基酯;

R₂是氢、取代或未取代的直链或支链的C1-C6烷基、取代或未取代的C6-C10芳基;

R₃是氢、氟、氯、溴、取代或未取代的直链或支链的C1-C6烷基;

R₁在苯环上的位置可以相对于二氟亚甲基的邻位、对位或者间位;

R₃在苯环上的位置可以相对于二氟亚甲基的邻位或者间位;

R₄是取代或未取代的C1-C6烷基;

R₂和R₄也可以环合起来与它们之间的碳原子、氧原子一起形成5-7元环;

其中,所述取代是指被选自以下的基团所取代:卤素、C1-C6烷基、C1-C6烷氧基、C1-C6烯基、C1-C6炔基、C3-C6环氧基、羟基、硝基、氨基、巯基、C1-C5烷基氨基、二(C1-C5烷基)氨基、C1-C5烷基硫基、二氟甲基、三氟甲基、二氟甲氧基、羧基。

【請求項2】

2.如权利要求1所述的化合物,其中R₁是氢、氟、氯、溴、三氟甲基、直链或支链的C1-C6烷基, C6-C10芳基,直链或支链C1-C6烷氧基, C6-C10芳氧基,直链或支链C1-C6烷氧酰基, C6-C10芳氧酰基,直链或支链C1-C6烷基酯。

【請求項3】

3.如权利要求1所述的化合物,其特征在于,R₁可选自氢、氟、氯、溴、三氟甲基、甲基、甲氧基、甲氧酰基、2-O-2-甲基丙酸异丙酯。

【請求項4】

4.如权利要求1-3中任一项所述的化合物,其特征在于,R₂可选自氢、甲基、乙基、丙基、异丙基、苄基。

【請求項5】

5.如权利要求1-3中任一项所述的化合物,其特征在于,R₃可选自氢、氟、氯、溴、甲基、乙基。

【請求項6】

6.如权利要求1所述的化合物,其中所述的化合物选自:

2-(4-((4-氯苯基)二氟甲基)苯氧基)-2-甲基丙酸异丙酯;

2-(4-((4-溴苯基)二氟甲基)苯氧基)-2-甲基丙酸异丙酯;

2-(4-((4-氟苯基)二氟甲基)苯氧基)-2-甲基丙酸异丙酯;

2-(4-((4-三氟甲基苯基)二氟甲基)苯氧基)-2-甲基丙酸异丙酯;

2-(4-(苯基二氟甲基)苯氧基)-2-甲基丙酸异丙酯；
 2-(4-((4-甲基苯基)二氟甲基)苯氧基)-2-甲基丙酸异丙酯；
 2-(4-((4-甲氧基苯基)二氟甲基)苯氧基)-2-甲基丙酸异丙酯；
 2-(4-((3-氯苯基)二氟甲基)苯氧基)-2-甲基丙酸异丙酯；
 2-(4-((3-甲基苯基)二氟甲基)苯氧基)-2-甲基丙酸异丙酯；
 2-(4-((3-三氟甲基苯基)二氟甲基)苯氧基)-2-甲基丙酸异丙酯；
 2-(4-((2-氯苯基)二氟甲基)苯氧基)-2-甲基丙酸异丙酯；
 2-(4-((2-甲基苯基)二氟甲基)苯氧基)-2-甲基丙酸异丙酯；
 2-(4-((2-三氟甲基苯基)二氟甲基)苯氧基)-2-甲基丙酸异丙酯；
 2-(4-((4-甲氧基苯基)二氟甲基)苯氧基)-2-甲基丙酸异丙酯；
 双-(2-甲基丙酸异丙酯-2-氧苯基-4-)-二氟甲烷；
 2-(4-((4-氯苯基)二氟甲基)-3-甲基苯氧基)-2-甲基丙酸异丙酯；
 2-(4-((4-氯苯基)二氟甲基)-2-氯苯氧基)-2-甲基丙酸异丙酯；
 2-(4-((4-氯苯基)二氟甲基)苯氧基)-乙酸苄酯；
 2-(4-((4-氯苯基)二氟甲基)苯氧基)丁酸乙酯；
 2-(4-((4-氯苯基)二氟甲基)苯氧基)丙酸甲酯；
 4-(4-((4-氯苯基)二氟甲基)苯氧基)丁酸乙酯；
 2-(4-((4-氯苯基)二氟甲基)苯氧基)-2-甲基丙酸钠盐；
 2-(4-((4-氯苯基)二氟甲基)苯氧基)-2-甲基丙酸；
 2-(4-((4-氯苯基)二氟甲基)苯氧基)-4-羟基-丁酸甲酯；
 3-(4-((4-氯苯基)二氟甲基)苯氧基)-二氢呋喃-2(3H)酮。

【請求項7】

7.一种药物组合物，其中包括有效剂量的权利要求1～6中任一项目的式I化合物或者它们药学上可接受的盐或其溶剂化物，以及药物可接受的载体。

【請求項8】

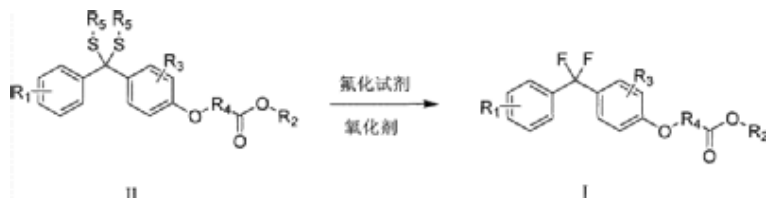
8.权利要求1～6中任一项所述的化合物或者药学上可接受的盐或其溶剂化物在制备用于治疗或预防需激活人过氧化物酶增殖物活化受体进行治疗或预防的疾病的药物中的应用。

【請求項9】

9.权利要求1～6中任一项所述的化合物或者药学上可接受的盐或其溶剂化物在制备用于治疗或预防高血脂症或因高血脂引发的心脑血管疾病，如糖尿病、动脉粥样硬化、脑中风、冠心病等药物中的应用。

【請求項10】

10.一种制备如权利要求1所述的式I化合物的方法，所述方法包括：将如下结构所示的式II化合物与氧化剂和氟化试剂反应得到式I化合物，



其中R₁、R₂、R₃、R₄如权利要求1所定义；R₅可以不存在，即只有一个S原子，其与两个苯环之间的碳原子形成硫羰基形式，或者是取代或未取代的直链或支链的C1-C6烷基、取代或无取代的芳基，或者两个R₅基团相连，与两个硫原子以及连接两个硫原子的碳原子形成5-7元环。

【請求項11】

11.根据权利要求10所述的方法，其特征在于，所述氟化试剂为亲核型氟化试剂。

【請求項12】

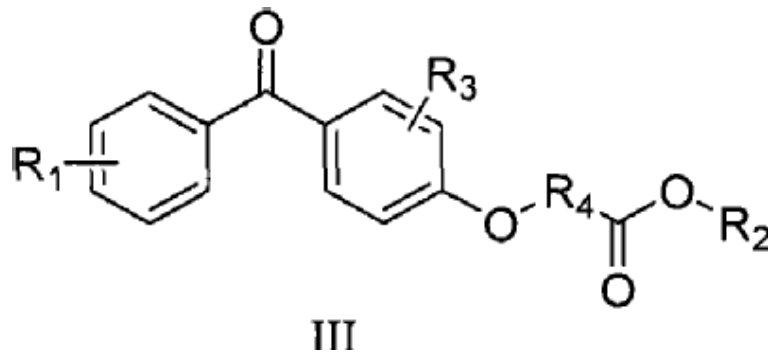
12.根据权利要求11所述的亲核型氟化试剂，其特征在于，可选自二乙氨基三氟化硫、双(2-甲氧基乙基)胺三氟化硫、二甲氨基三氟化硫、吡啶氢氟酸盐、三乙胺氢氟酸盐、四氟化硫、氟化氢、氟化钾、氟化银、氟化铟、N-氟代双苯磺酰亚胺、二甲氨基三氟化硫、三氟化硫吗啉、2, 2-二氟-1, 3-二甲基咪唑啉、1-氟-2, 6-二氯吡啶四氟硼酸盐、1-氟-2, 4, 6-三甲基吡啶三氟甲烷磺酸盐、四丁基铵氢氟酸盐、六氟丙烯二乙胺复合物、二氟化碘甲苯、N,N-二异丙基乙胺三氢氟酸盐。

【請求項13】

13.根据权利要求10所述的方法，其特征在于，所述氧化剂可选自溴代丁二酰亚胺，二溴海因，碘代丁二酰亚胺，液溴或者碘。

【請求項14】

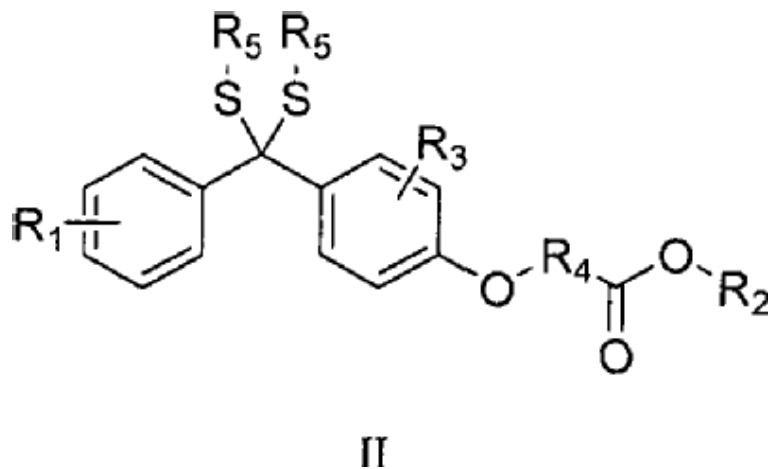
14.一种制备如权利要求1所述的式I化合物的方法，所述方法包括：将如下结构所示的式II化合物与氟化试剂反应得到式I化合物；



其中R₁、R₂、R₃、R₄如权利要求1所定义。

【請求項15】

15.式II化合物，



【請求項16】

2-(4-((4-氯苯基)硫甲酰基)苯氧基)-2-甲基丙酸异丙酯；

2-(4-((4-氯苯基)双(乙硫基)甲基)苯氧基)-2-甲基丙酸异丙酯；

2-(4-((4-溴苯基)双(乙巯基)甲基)苯氧基)-2-甲基丙酸异丙酯；

2-(4-((4-氟苯基)双(乙硫基)甲基)苯氧基)-2-甲基丙酸异丙酯；

2-(4-((4-三氟甲基苯基)双(乙巯基)甲基)苯氧基)-2-甲基丙酸异丙酯；

2-(4-(苯基双(乙巯基)甲基)苯氧基)-2-甲基丙酸异丙酯；

2-(4-((4-甲基苯基)双(乙巯基)甲基)苯氧基)-2-甲基丙酸异丙酯；

2-(4-((4-甲氧基苯基)双(乙硫基)甲基)苯氧基)-2-甲基丙酸异丙酯;

2-(4-((3-氯苯基)双(乙硫基)甲基)苯氧基)-2-甲基丙酸异丙酯；

2-(4-((3-甲基苯基)双(乙硫基)氟甲基)苯氧基)-2-甲基丙酸异丙酯；

2-(4-((3-三氟甲基苯基)双(乙硫基)甲基)苯氧基)-2-甲基丙酸异丙酯；

2-(4-((2-氯苄基)双(乙硫基)甲基)苯氧基)-2-甲基丙酸异丙酯；

2-(4-((2-甲基苯基)双(乙氧基)甲基)苯氧基)-2-甲基丙酸异丙酯:

2-(4-((2-三氟甲基苯基)双(乙基基)甲基)苯氧基)-2-甲基丙酸异丙酯；

2-(4-((4-甲氧酰基苯基)双(乙硫基)甲基)苯氧基)-2-甲基丙酸异丙酯；

双-(2-甲基丙酸)丙酯-2-氯苄基-4)-双(乙基苄基)甲烷:

2-(4-((4-氯苄基)双(乙硫基)甲基)-3-甲基苯氧基)-2-甲基丙酸异丙酯；

2-(4-((4-氯苄基)双(乙硫基)甲基)-2-氯苯氧基)-2-甲基丙酸异丙酯；

2-(4-((4-氯苯基)双(乙硫基)甲基)苯氧基)-乙酸苄酯；

2-(4-((4-氯苯基)双(乙硫基)甲基)苯氧基)丁酸乙酯；

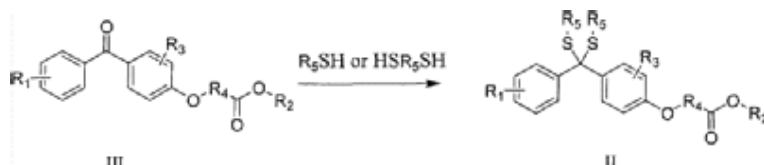
2-(4-((4-氯苯基)双(乙硫基)甲基)苯氧基)丙酸甲酯；

4-((4-((4-氯苯基)双(乙硫基)甲基)苯氧基)丁酸乙酯。

【請求項17】

17.一种制备如

Figure 1. The effect of the concentration of the solution on the adsorption of the dye. The concentration of the solution was 0.05, 0.1, 0.2, 0.3, 0.4, 0.5, 0.6, 0.7, 0.8, 0.9, 1.0, 1.5, 2.0, 3.0, 4.0, 5.0, 6.0, 7.0, 8.0, 9.0, 10.0, 15.0, 20.0, 30.0, 40.0, 50.0, 60.0, 70.0, 80.0, 90.0, 100.0, 150.0, 200.0, 300.0, 400.0, 500.0, 600.0, 700.0, 800.0, 900.0, 1000.0, 1500.0, 2000.0, 3000.0, 4000.0, 5000.0, 6000.0, 7000.0, 8000.0, 9000.0, 10000.0, 15000.0, 20000.0, 30000.0, 40000.0, 50000.0, 60000.0, 70000.0, 80000.0, 90000.0, 100000.0, 150000.0, 200000.0, 300000.0, 400000.0, 500000.0, 600000.0, 700000.0, 800000.0, 900000.0, 1000000.0, 1500000.0, 2000000.0, 3000000.0, 4000000.0, 5000000.0, 6000000.0, 7000000.0, 8000000.0, 9000000.0, 10000000.0, 15000000.0, 20000000.0, 30000000.0, 40000000.0, 50000000.0, 60000000.0, 70000000.0, 80000000.0, 90000000.0, 100000000.0, 150000000.0, 200000000.0, 300000000.0, 400000000.0, 500000000.0, 600000000.0, 700000000.0, 800000000.0, 900000000.0, 1000000000.0, 1500000000.0, 2000000000.0, 3000000000.0, 4000000000.0, 5000000000.0, 6000000000.0, 7000000000.0, 8000000000.0, 9000000000.0, 10000000000.0, 15000000000.0, 20000000000.0, 30000000000.0, 40000000000.0, 50000000000.0, 60000000000.0, 70000000000.0, 80000000000.0, 90000000000.0, 100000000000.0, 150000000000.0, 200000000000.0, 300000000000.0, 400000000000.0, 500000000000.0, 600000000000.0, 700000000000.0, 800000000000.0, 900000000000.0, 1000000000000.0, 1500000000000.0, 2000000000000.0, 3000000000000.0, 4000000000000.0, 5000000000000.0, 6000000000000.0, 7000000000000.0, 8000000000000.0, 9000000000000.0, 10000000000000.0, 15000000000000.0, 20000000000000.0, 30000000000000.0, 40000000000000.0, 50000000000000.0, 60000000000000.0, 70000000000000.0, 80000000000000.0, 90000000000000.0, 100000000000000.0, 150000000000000.0, 200000000000000.0, 300000000000000.0, 400000000000000.0, 500000000000000.0, 600000000000000.0, 700000000000000.0, 800000000000000.0, 900000000000000.0, 1000000000000000.0, 1500000000000000.0, 2000000000000000.0, 3000000000000000.0, 4000000000000000.0, 5000000000000000.0, 6000000000000000.0, 7000000000000000.0, 8000000000000000.0, 9000000000000000.0, 10000000000000000.0, 15000000000000000.0, 20000000000000000.0, 30000000000000000.0, 40000000000000000.0, 50000000000000000.0, 60000000000000000.0, 70000000000000000.0, 80000000000000000.0, 90000000000000000.0, 100000000000000000.0, 150000000000000000.0, 200000000000000000.0, 300000000000000000.0, 400000000000000000.0, 500000000000000000.0, 600000000000000000.0, 700000000000000000.0, 800000000000000000.0, 900000000000000000.0, 1000000000000000000.0, 1500000000000000000.0, 2000000000000000000.0, 3000000000000000000.0, 4000000000000000000.0, 5000000000000000000.0, 6000000000000000000.0, 7000000000000000000.0, 8000000000000000000.0, 9000000000000000000.0, 10000000000000000000.0, 15000000000000000000.0, 20000000000000000000.0, 30000000000000000000.0, 40000000000000000000.0, 50000000000000000000.0, 60000000000000000000.0, 70000000000000000000.0, 80000000000000000000.0, 90000000000000000000.0, 100000000000000000000.0, 150000000000000000000.0, 200000000000000000000.0, 300000000000000000000.0, 400000000000000000000.0, 500000000000000000000.0, 600000000000000000000.0, 700000000000000000000.0, 800000000000000000000.0, 900000000000000000000.0, 1000000000000000000000.0, 1500000000000000000000.0, 2000000000000000000000.0, 3000000000000000000000.0, 4000000000000000000000.0, 5000000000000000000000.0, 6000000000000000000000.0, 7000000000000000000000.0, 8000000000000000000000.0, 9000000000000000000000.0, 10000000000000000000000.0, 15000000000000000000000.0, 20000000000000000000000.0, 30000000000000000000000.0, 40000000000000000000000.0, 50000000000000000000000.0, 60000000000000000000000.0, 70000000000000000000000.0, 80000000000000000000000.0, 90000000000000000000000.0, 100000000000000000000000.0, 150000000000000000000000.0, 200000000000000000000000.0, 300000000000000000000000.0, 400000000000000000000000.0, 500000000000000000000000.0, 600000000000000000000000.0, 700000000000000000000000.0, 800000000000000000000000.0, 900000000000000000000000.0, 1000000000000000000000000.0, 1500000000000000000000000.0



【請求項18】

【請求項19】

【請求項20】



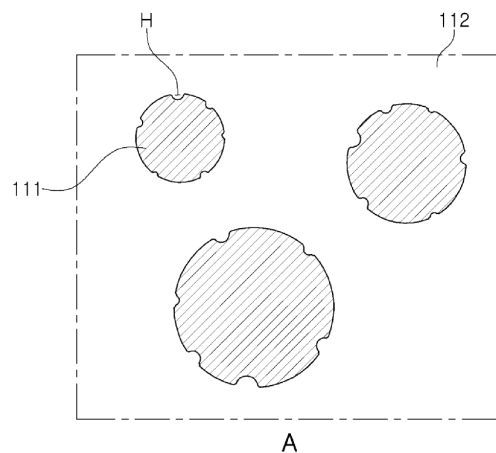
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【出願人情報】 SAMSUNG ELECTRO-MECHANICS CO., LTD.
【発明者情報】 KWON, Sang Kyun, CHUNG, Jong Ho, SIM, Chul Min, LEE, Seong Jae, RYU, Han Wool, MOON, Byeong Cheol

【発明の名称】 코일 부품

【要約】

본 발명의 일 실시 형태에 따른 코일 부품은 코일부가 내설된 바디 및 상기 코일부와 접속된 외부 전극을 포함하며, 상기 바디는 다수의 금속 자성 입자를 포함하며, 상기 다수의 금속 자성 입자 중 적어도 일부의 표면에는 다수의 홈이 형성되며, 상기 다수의 홈을 연결하는 상기 금속 자성 입자의 표면은 구면이다.



【請求の範囲】

【請求項1】

1. 코일부가 내설된 바디; 및
상기 코일부와 접속된 외부 전극;을 포함하며,
상기 바디는 다수의 금속 자성 입자를 포함하며,
상기 다수의 금속 자성 입자 중 적어도 일부 입자의 표면에는 다수의 홈이 형성되며, 상기 다수의 홈을 연결하는 상기 금속 자성 입자의 표면은 구면인 코일 부품.

【請求項2】

2. 제1항에 있어서,
상기 홈은 상기 금속 자성 입자의 표면에서 측정된 길이가 30nm-1μm인 코일 부품.

【請求項3】

3. 제1항에 있어서,
상기 다수의 금속 자성 입자는 D50이 20-40μm인 코일 부품.

【請求項4】

4. 제1항에 있어서,
상기 홈은 덴드라이트 형상인 코일 부품.

【請求項5】

5. 제1항에 있어서,
상기 금속 자성 입자는 상기 다수의 홈이 형성된 영역을 제외하고 전체적으로 구형인 코일 부품.

【請求項6】

6. 제1항에 있어서,
상기 다수의 홈 중 적어도 일부는 서로 크기가 다른 코일 부품.

【請求項7】

7. 제6항에 있어서,
상기 다수의 홈 중 서로 크기가 다른 것은 얇은꼴인 코일 부품.

【請求項8】

8. 제1항에 있어서,
상기 다수의 홈 중 적어도 일부는 서로 형상이 다른 코일 부품.

【請求項9】

9. 제1항에 있어서,
상기 금속 자성 입자의 표면에는 결정립이 존재하지 않는 코일 부품.

【請求項10】

10. 제1항에 있어서,
상기 금속 자성 입자의 표면에는 상기 금속 자성 입자를 이루는 금속의 산화물이 존재하지 않는 코일 부품.

【請求項11】

11. 제1항에 있어서,
상기 금속 자성 입자의 표면에 형성된 코팅층을 더 포함하는 코일 부품.

【請求項12】

12. 제1항에 있어서,
상기 금속 자성 입자는 Fe계 합금을 포함하는 코일 부품.

【請求項13】

13. 제12항에 있어서,
상기 Fe계 합금은 Fe의 함량이 75at% 이상인 코일 부품.

【請求項14】

14. 제12항에 있어서,
상기 Fe 합금은 $(Fe_{(1-a)}M^1_a)_{100-b-c-d-e-f-g}M^2_bB_cP_dCu_eM^3_g$ 의 조성식으로 표현되며, 여기서, M^1 은 Co 및 Ni 중 적어도 하나의 원소, M^2 는 Nb, Mo, Zr, Ta, W, Hf, Ti, V, Cr 및 Mn으로 구성되는 군에서 선택된 적어도 하나의 원소, M^3 는 C, Si, Al, Ga 및 Ge으로 구성되는 군에서 선택된 적어도 하나의 원소이며, a, b, c, d, e, g는 원자%를 기준으로 각각 $0 \leq a \leq 0.5$, $0 < b \leq 3$, $7 \leq c \leq 11$, $0 < d \leq 2$, $0.6 \leq e \leq 1.5$, $7 \leq g \leq 15$ 인 함량 조건을 갖는 코일 부품.



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 【出願人情報】 SWIMC LLC(assignee)
 【発明者情報】 Tye Anthony J.

【発明の名称】 Curable Coating Compositions

【要約】

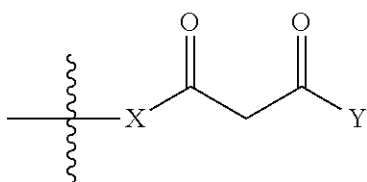
Described herein are two-component curable compositions for coatings, paints, primers, topcoats, and the like. The systems herein include curable components that permit a wide latitude in additional additives used in the product formulation. In one aspect, the curable components of the compositions include a first component of polymer(s) or oligomer(s) having a beta-dicarbonyl group or dicarbonyl functionality of 1 or greater combined with a separate, second component of polymer(s) or oligomer(s) having an alkylidene malonate functionality of 1 or greater in the presence of a catalyst or initiator and other acidic compositional components.

【請求の範囲】

【請求項1】

1. A curable composition comprising:

(i) a first cure component of a polymer or oligomer having a dicarbonyl functionality of 1 or greater provided by a moiety on the polymer or oligomer having the structure of Formula I



(Formula I)

wherein

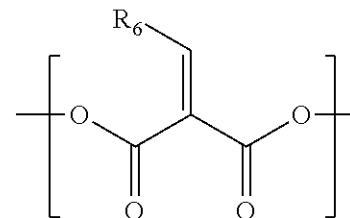
X is a heteroatom linker or organic group to a polymer or oligomer backbone;

Y is —OR₁ or a —C1 to —C4 hydrocarbyl group; and

R₁ is a C1 to C20 hydrocarbyl group;

(ii) a second cure component of another polymer or oligomer having an alkylidene malonate functionality of 1 or greater provided by the structure of Formula III

(Formula III)



wherein R₆ is hydrogen, a C1 to C9 alkyl group, or an aryl group; and

a catalyst or initiator.

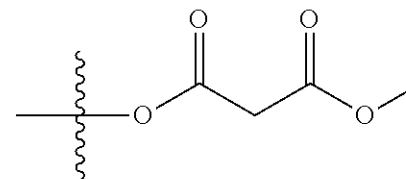
【請求項2】

2. The curable composition of claim 1, wherein the curable composition includes additives having a pKa less than about 12, less than about 10, less than about 8, less than about 7, or less than about 6.

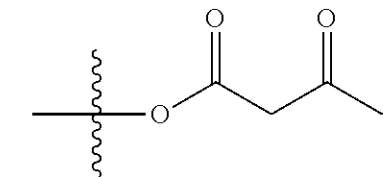
【請求項3】

3. The curable composition of claim 1, wherein the dicarbonyl structures are selected from the moieties of Formula Ia, Formula Ib, or mixtures thereof:

(Formula Ia)



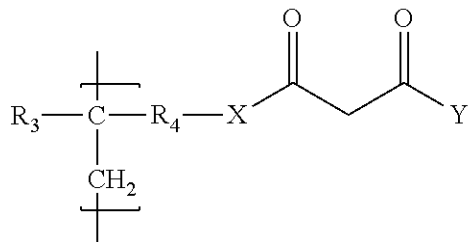
(Formula Ib)



【請求項4】

4. The curable composition of claim 1, wherein the first cure component is a polymer or oligomer having the structure of Formula II:

(Formula II)



wherein

R₃ is hydrogen or a linear, branched, or cyclic C1 to C4 hydrocarbyl group;

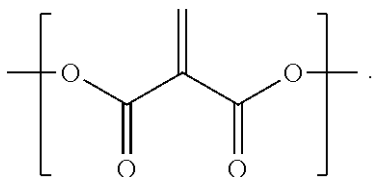
R₄ is a linear, branched, or cyclic C1 to C4 hydrocarbyl linking group or an ester group of the structure —C(O)OR₅— with R₅ being a C1 to C4 linear, branched, or cyclic hydrocarbyl group.

【請求項5】

5. The curable composition of claim 1, wherein monomers to form the polymer or oligomer forming the first cure component are selected from the group consisting of acetoacetoxyethyl (meth)acrylate; acetoacetoxypropyl (meth)acrylate; acetoacetoxybutyl (meth)acrylate; allyl acetoacetate; 2,3-di(acetoacetoxy)propyl methacrylate; and mixtures thereof.

【請求項6】

6. The curable composition of claim 1, wherein the alkylidene malonate functionality of the second cure component has the structure:



【請求項7】

7. The curable composition of claim 1, wherein the polymer or oligomer having the dicarbonyl functionality further includes acrylic monomer units, vinyl monomer units, polyester monomer units, polycarbonate monomer units, polyepoxyester monomer units, polyurethane monomer units, or mixtures thereof.

【請求項8】

8. The curable composition of claim 1, wherein the polymer or oligomer having the alkylidene malonate monomer is a condensation product of diethyl methylene malonate and 1,4-butanediol.

【請求項9】

9. The curable composition of claim 1, wherein the catalyst or initiator is polymeric or oligomeric.

【請求項10】

10. The curable composition of claim 1, wherein the catalyst or initiator is a compound or a polymer selected from the group consisting of guanidines, amidines, hydroxides,

alkoxides, oxides, tertiary amines, alkali metal carbonates, alkali metal bicarbonates, alkali metal phosphates, alkali metal hydrogen phosphates, phosphines, alkali metal salts of carboxylic acids, alkali silicates, tetra methyl guanidine (TMG), 1,8-Diazabicyclo(5.4.0)undec-7-ene (DBU), 1,5-Diazabicyclo(4.3.0)non-5-ene (DBN), 1,4 diazabicyclo (2.2.2)octane (DABCO), tertiary butyl ammonium hydroxide (TBAH), sodium hydroxide, potassium hydroxide, sodium methoxide, sodium ethoxide, tri potassium phosphate, calcium oxide, triethylamine, sodium carbonate, potassium carbonate, sodium bicarbonate, potassium bicarbonate, potassium hydrogen phosphate (mono-basic and di-basic), triphenyl phosphine, triethyl phosphine, sodium silicate, potassium acetate, potassium acrylate, potassium octanoate, and combinations thereof.

【請求項11】

11. The curable composition of claim 1, wherein the catalyst or initiator has a pKa of about 12 or less, about 10 or less, or about 8 or less.

【請求項12】

12. The curable composition according to claim 1, wherein an acid is added to adjust pot-life and/or cure properties.

【請求項13】

13. The curable composition of claim 12, wherein the acid is selected from acetic acid, propionic acid, benzoic acid, ethylhexanoic acid, or combinations thereof.

【請求項14】

14. The curable composition of claim 1, further comprising organic pigments, inorganic pigments, or combinations thereof.

【請求項15】

15. The curable compositions of claim 14, wherein the organic pigments have an acidic surface treatment.

【請求項16】

16. The curable compositions of claim 1, further comprising components having a pKa between one of about 3 and about 12, about 3 and about 10, about 3 and about 8, or about 3 and about 7.

【請求項17】

17. The curable compositions of claim 1, when cured, further comprising over about 200 MEK double rubs after about 24 hours of ambient cure.

【請求項18】

18. The curable composition of claim 1, further including inorganic pigments having an acidic surface treatment.

【請求項19】

19. The curable composition of claim 1, further including benzotriazole-based UV absorbers.

【請求項20】

20. The curable composition of claim 1, wherein the curable composition is applied to a substrate having an acidic surface.