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**Bathe et al.**

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(54) **POLYMORPHIC FORMS OF 1-[4-(5-CYANOINDOL-3-YL)BUTYL]-4-(2-CARBAMOYLBENZOFURAN-5-YL) PIPERAZINE HYDROCHLORIDE**

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(73) Assignee: **Merck Patentgesellschaft**, Darmstadt (DE)

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(\* ) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

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**Related U.S. Application Data**

(60) Continuation of application No. 13/085,117, filed on Apr. 12, 2011, now Pat. No. 8,318,744, which is a continuation of application No. 12/566,835, filed on Sep. 25, 2009, now Pat. No. 7,981,894, which is a division of application No. 12/110,704, filed on Apr. 28, 2008, now Pat. No. 7,834,020, which is a division of application No. 10/481,270, filed as application No. PCT/EP02/06153 on Jun. 5, 2002, now Pat. No. 7,381,726.

(30) **Foreign Application Priority Data**

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(51) **Int. Cl.**

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**C07D 403/14** (2006.01)  
**C07D 405/14** (2006.01)  
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CPC ..... **C07D 405/14** (2013.01); **A61K 31/496** (2013.01); **C07D 405/12** (2013.01)  
USPC ..... **514/254.09**; 544/373

(58) **Field of Classification Search**

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See application file for complete search history.

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(57) **ABSTRACT**

The invention relates to new crystalline modifications of the hydrochloride of 1-[4-(5-cyanoindol-3-yl)butyl]-4-(2-carbamoyl-benzofuran-5-yl)-piperazine, crystalline modification of the dihydrochloride of 1-[4-(5-cyanoindol-3-yl)butyl]-4-(2-carbamoyl-benzofuran-5-yl)-piperazine and amorphous 1-[4-(5-cyanoindol-3-yl)butyl]-4-(2-carbamoyl-benzofuran-5-yl)-piperazine hydrochloride which are suitable in particular for the preparation of solid medicaments for the treatment or prevention of depressive disorders, anxiety disorders, bipolar disorders, mania, dementia, substance-related disorders, sexual dysfunctions, eating disorders, obesity, fibromyalgia, sleeping disorders, psychiatric disorders, cerebral infarct, tension, for the therapy of side-effects in the treatment of hypogonadism, secondary amenorrhea, premenstrual syndrome and undesired puerperal lactation.

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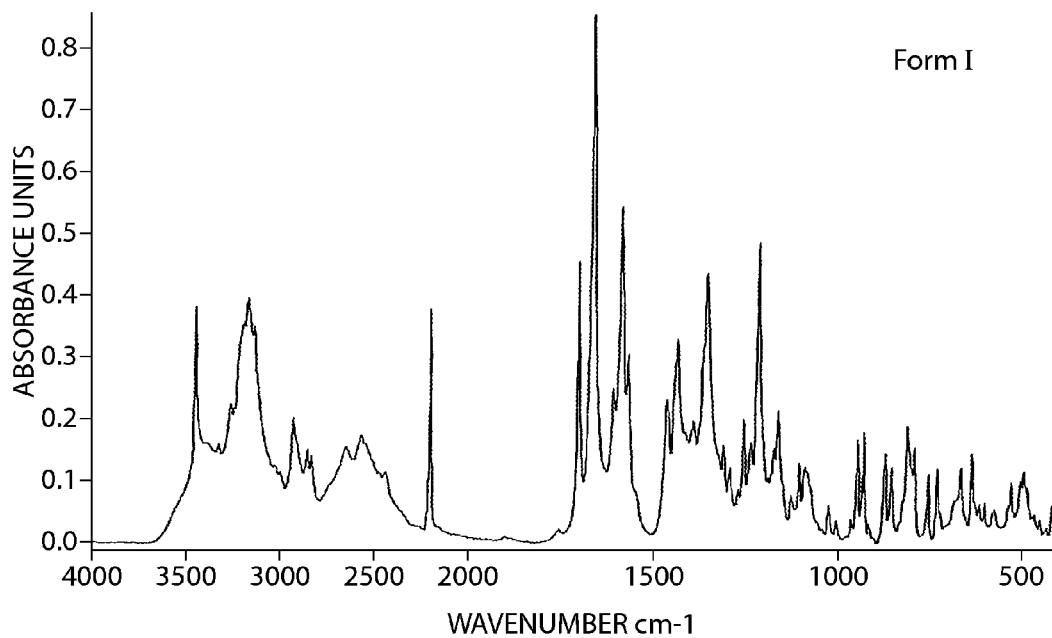


Fig. 1

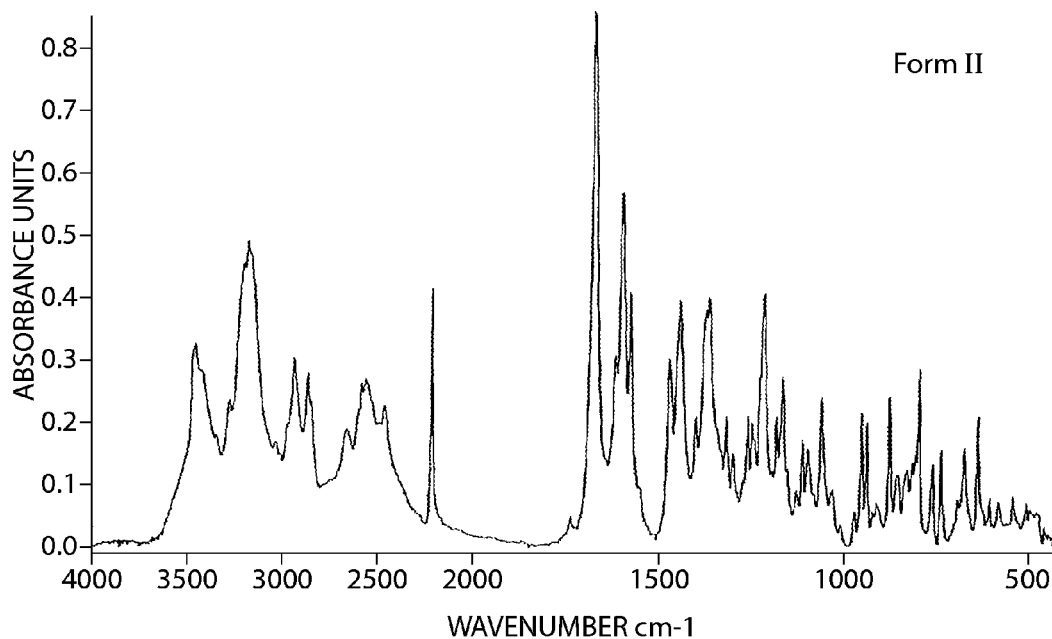


Fig. 2

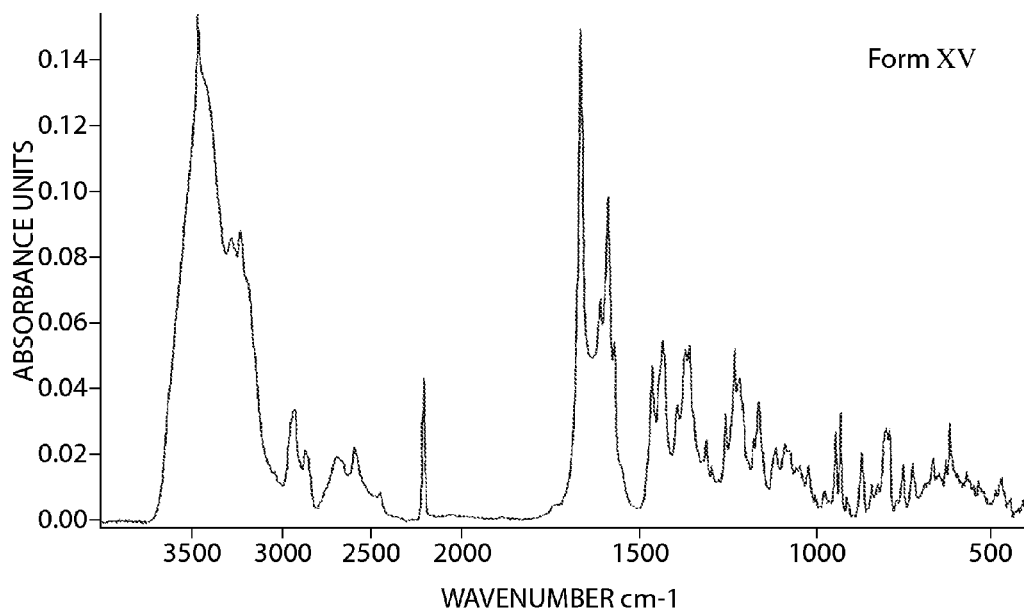


Fig. 3

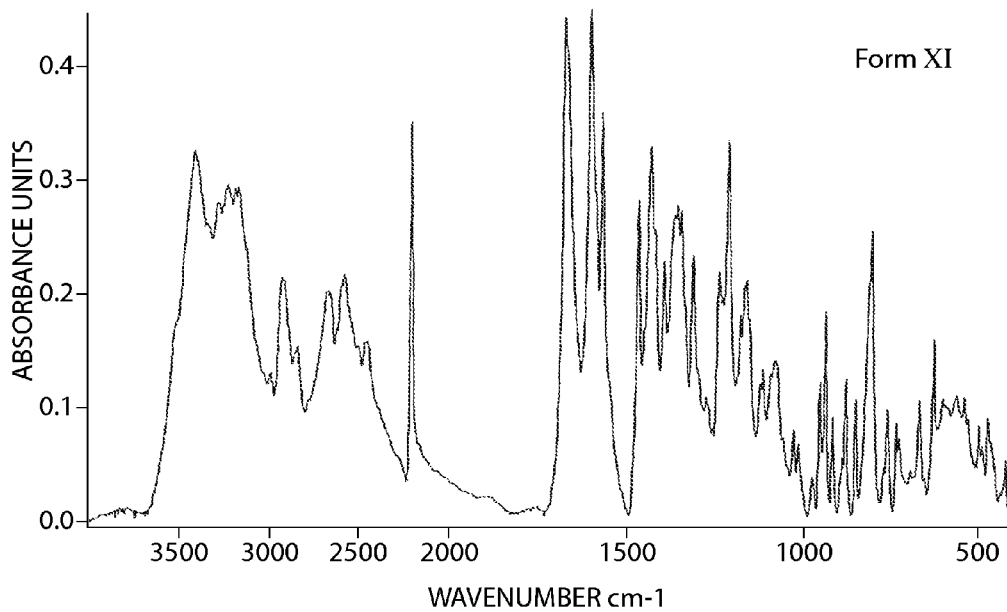


Fig. 4

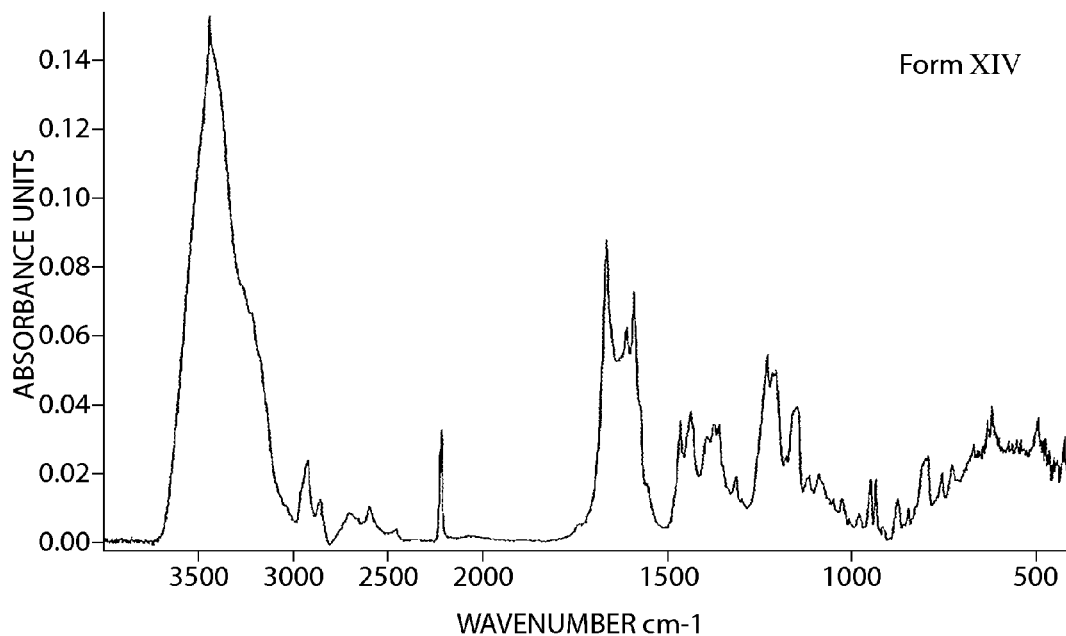


Fig. 5

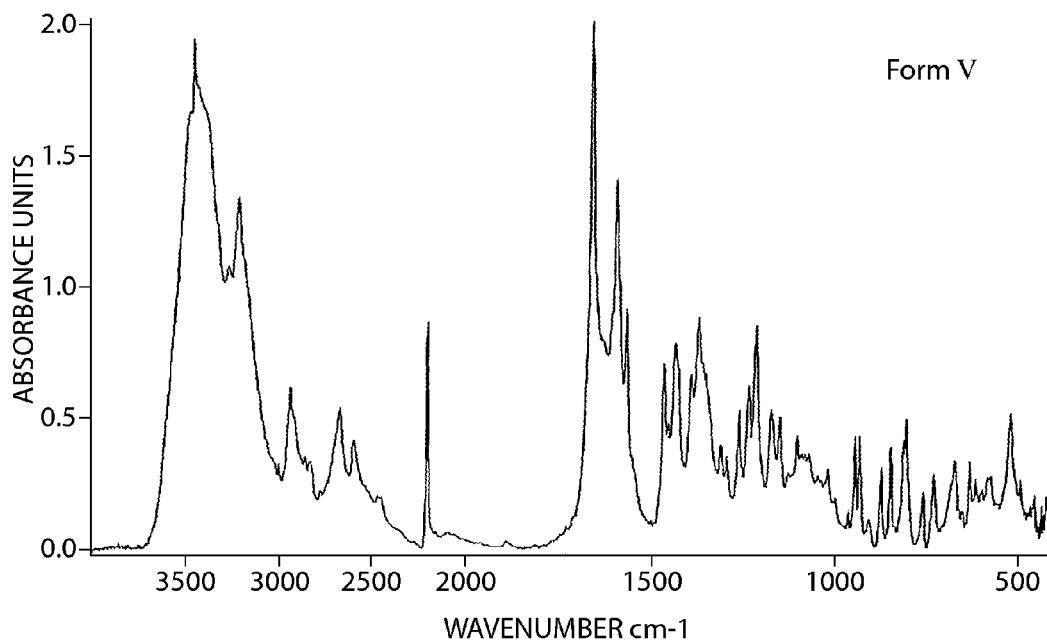


Fig. 6

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