

Lehrstuhl Organische Chemie I

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ОТЗЫВ

члена диссертационного совета на диссертацию Дарьина Дмитрия Викторовича на тему: «Новая стратегия синтеза конденсированных азагетероциклов, основанная на взаимодействии геминальных ендиаминов с ароматическими диэлектрофилами», представленную на соискание ученой степени доктора химических наук по специальности 02.00.03 – Органическая химия

The Doctoral Dissertation of Dr. D. V. Dar'in involves the exciting and fast-moving field of organic and medicinal chemistry: development of new synthetic methodologies towards novel potentially bioactive heterocyclic compounds.

Dr. Dar'in's contributions specifically focus on cyclocondensation reactions of geminal enediamines (also an extremely wide variety thereof, bearing three nucleophilic centers) with different aromatic 1,3-dielectrophiles. Towards this end, his Chapters 2.1.-2.2. describe the synthesis of starting compounds: β -acyl substituted geminal enediamines, aldehydes, ketones, nitriles and nitro derivatives. Subsequently, Dr. Dar'in has succeeded in performing the planned reactions of aromatic 1,3-dielectrophiles with enediamines towards ortho-annelated azines (Chapter 2.3.)

One also finds in Chapter 2.4 the successfully performed transformations leading to new *peri*-annelated N-heterocycles. There was some prior art involving enediamines, but Dr. Dar'in's reactions using enediamines outclassed the competition, both with respect to yield and broad scope, demonstrated in the extensive series of experiments.

Chapter 2.5 breaks more new ground, this time involving enediamine condensations with ortho-dihalogenarenes giving new fused α -aminopyrrols. This constitutes a somewhat less explored process that can be extremely useful for the synthesis of indole derivatives. Here Dr. Dar'in established the viability of CuI-catalyzed N-arylation, a new facile approach towards fused α -aminopyrrols.

The results presented in these Chapters show the hard work that went into establishing the generality. Dr. Dar'in expands the impact of the above results by describing many conversions of

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the enediamines into useful novel heterocyclic compounds.

I found the experimental section of his dissertation to be of very high caliber, with all new compounds and new reactions fully documented. Of course, this is not really surprising, given that 22 original publications have already resulted from his work. This is excellent productivity, particularly given the importance of his findings and broad scope of new ground broken. Dr. Dar'in deserves to be recognized and rewarded for his productivity.

In summary, Dr. Dar'in is a highly motivated, extremely productive, and broadly capable scientist who can carry out demanding organic syntheses of novel heterocyclic compounds. Chapter 2 describe extensive, thoroughly executed pieces of work that break much new conceptual ground and set new standards and "records" that future work by others in this field will have to be measured against.

Диссертация Дарьина Дмитрия Викторовича на тему: «Новая стратегия синтеза конденсированных азгетероциклов, основанная на взаимодействии геминальных ендиаминов с ароматическими диэлектрофилами» соответствует основным требованиям, установленным Приказом от 01.09.2016 № 6821/1 «О порядке присуждения ученых степеней в Санкт-Петербургском государственном университете», соискатель Дарьин Дмитрий Викторович заслуживает присуждения ученой степени доктора химических наук по специальности 02.00.03 – Органическая химия.

Член диссертационного совета

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19.10.2017



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