Kinetic [analysis](https://www.sciencedirect.com/science/article/pii/S0960148118307377) of new multi-component reaction for the formation of Z -N-(3-(naphthalene-2-yl)-4-oxothiazolidine-2-ylidene) benzamide

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**Supplemental Materials**

If the fourth step of the reaction be RDS, then the third step will be an equilibrium step. **Fig S 1** shows the simple form of the reaction mechanism in this condition.

On the basis of above statements, rate law can be derived as follow:

 (1)

 (2)

(3)

 (4)

 (6)

 (7)

if

 (8)

 (9)

Like previous section, if third step be the RDS, so step2 should be assumed as an equilibrium step. **Fig S 2** shows the simple form of the reaction mechanism in this condition.

On the basis of above statements, rate law can be derived as follow:

(10)

 (11)

 (12)

 (13)

 (14)

 (15)

 (16)

if

 (17)

Continuing the RDS assumption for the second step of the reaction, first step will be in equilibrium state. **Fig S 3** shows the simple form of the reaction mechanism in this condition.

On the basis of above statements, rate law can be derived as follow:

 (18)

 (19)

 (20)

 (21)

if

(22)

 (23)

 (24)

 (25)



**Figure S 1:** The simplified Scheme for the proposed reaction mechanism with step4 RDS



**Figure S 2:** The simplified Scheme for the proposed reaction mechanism with step3 RDS



**Figure S 3:** The simplified Scheme for the proposed reaction mechanism with step2 RDS