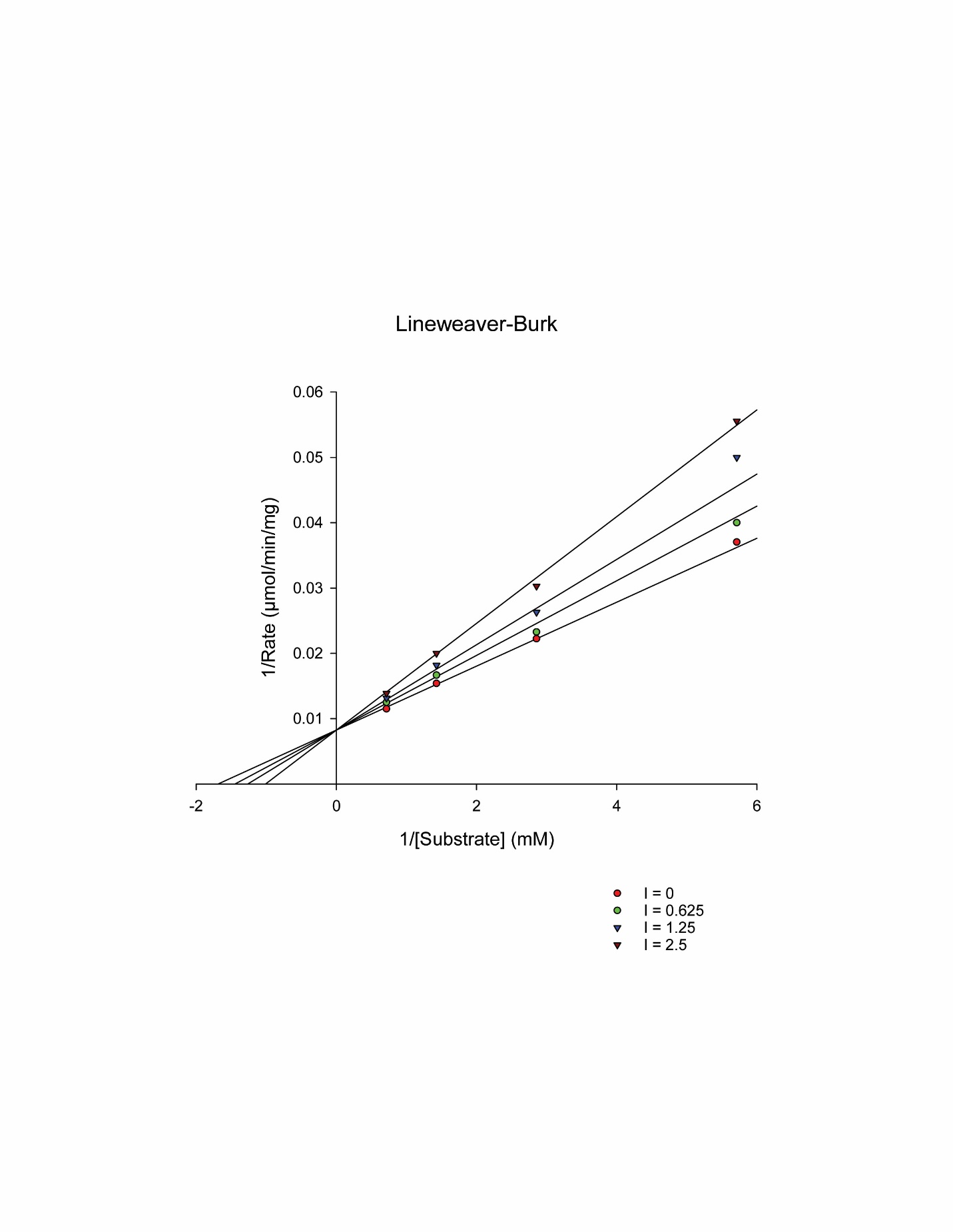
**SUPPLEMENTARY MATERIAL**

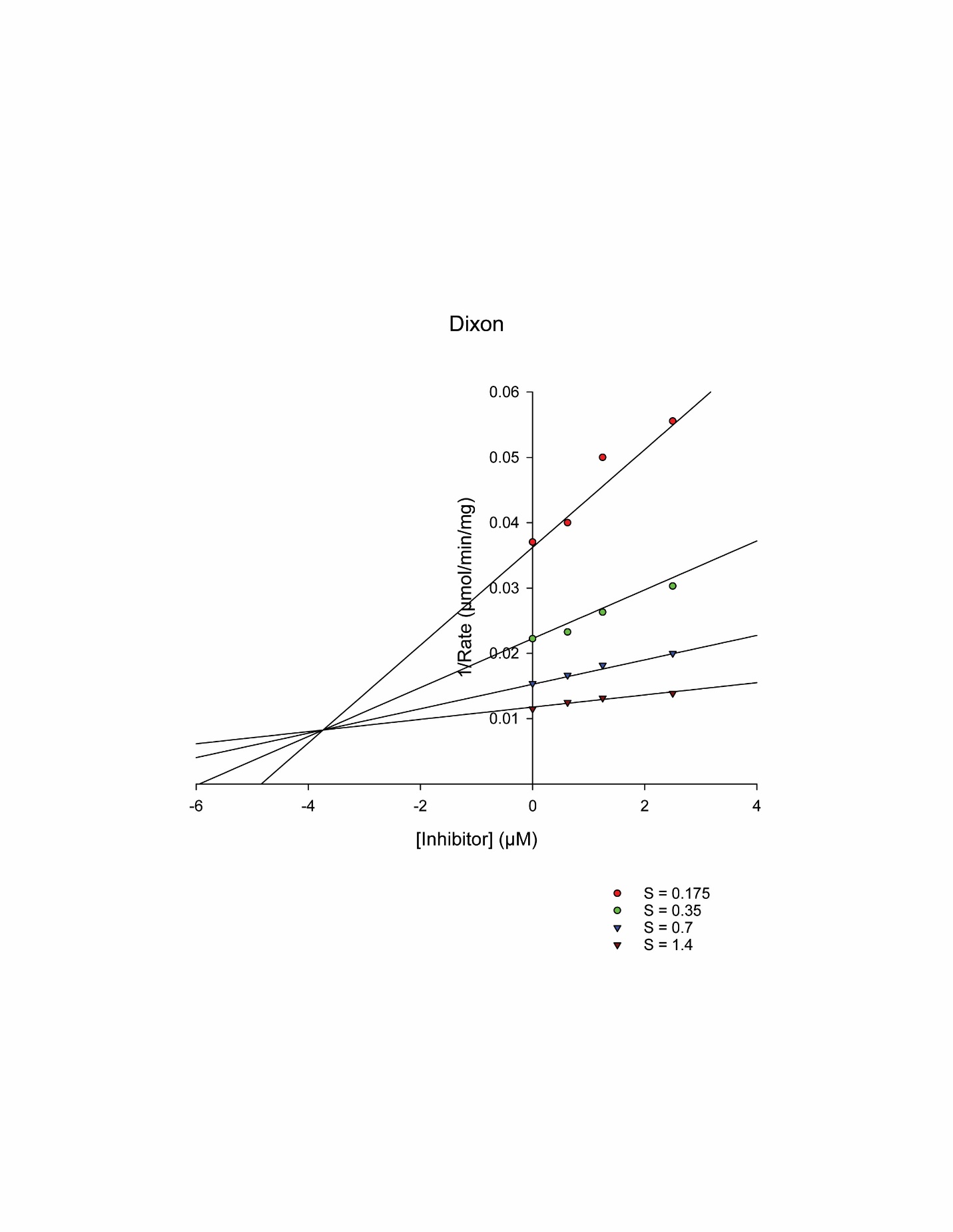
**Synthetic Piperidine-substituted Chalcone Analogs as Potential Hits for *α*-Amylase Inhibitory and Antioxidant Activities**

**Table-S1:** Kinetics data for *α*-amylase inhibitor

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Compounds** | **Vmax (*µ*M/min/mg)** | **Km (mM)** | **Ki (*µ*M)** | **Type of inhibition** |
| **2** | 120.3 ± 1.3 | 2.7 ± 0.3 | 3.7 ± 0.2 | Competitive type |
| **4** | 121.5 ± 2.2 | 3.0 ± 0.1 | 3.9 ± 0.2 | Competitive type |
| **7** | 120.1 ± 3.2 | 2.7 ± 0.2 | 3.6 ± 0.1 | Competitive type |
| **17** | 121.2 ± 2.0 | 0.77 ± 0.2 | 3.6 ± 0.1 | Competitive type |
| **18** | 120.9 ± 3.7 | 0.59 ± 0.2 | 3.7 ± 0.1 | Competitive type |
| **22** | 120.4 ± 1.8 | 5.7 ± 0.3 | 3.9 ± 0.2 | Competitive type |
| **Acarbose** | 115.3 ± 0.8 | 3.9 ± 0.1 | 3.2 ± 0.1 | Competitive type |



**Figure-S1:** Graph of compound **18**; Lineweaver- Burk plot of reciprocal of rate of reaction (velocities) vs. reciprocal of the substrate (starch) in the different concentrations of inhibitor (0, 0.625, 1.25 and 2.5 µM). At the same time, Vmax and Km values were calculated from Lineweaver- Burk plot.



**Figure-S2:** Graph of compound **18**; Dixon plot of reciprocal rate of reaction (velocities) vs. different inhibitor concentrations (0, 0.625, 1.25, and 2.5 *µ*M). In contrast, the Ki value was calculated from the Dixon plot

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**Figure-S3:** Dock pose of acarbose with a deviation.

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**Figure-S4:** Intermolecular interactions performed by the inhibitors (**A**) **7**, (**B**) **18**, (**C**) **4**, (**D**) **2**, (**E**) **22**, and (**F**) **17** in the α-amylase active site.

**Table-S2:** Dock score of the active compounds **2**, **4**, **7**, **17**, **18**, and **22**.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Comp.** | **Binding Affinity Kcal/mol** | **Distances**  **Å** | **Donor Atom** | **Acceptor Atom** | **Hydrophobic Interactions** | **Halogen bond** |
| **2** | -5.94 | 2.09 | 200LYS(NH3) | Lig(C=O) | 162LEU  235ILE |  |
| **4** | -6.39 | 2.37 | Lig(C=O) | 299HIS (NH2) | 162LEU  235ILE |  |
| **7** | -6.32 | 2.90 | Lig(C=O) | 299HIS (NH2) | 58TRP  63GLN  235ILE |  |
| **17** | -6.33 | 2.23 | 200 LYS (NH2) | Lig(C=O) | 62TYR,  162LEU  235ILE |  |
| **18** | -6.34 | 2.68 | 195ARG (NH2) | Lig(C=O) | 59TRP  62TYR  235ILE | 63GLN 2.86 |
| 1.89 | 195ARG(NH2) | Lig(C=O) |
| 2.63 | Lig(C=O) | 299HIS(NH2) |
| **22** | -5.73 | 2.17 | 200LYS | Lig(C=O) | 162LEU  235ILE |  |
| 1.57 | Lig(C=O) | 305HIS |