Chapter 3

Synthesis of 1,2,3,4-tetrahydro pyrimidines derivatives (AB-146 to AB-190)

3.1 Section: - ll

In section II keeping in mind various biomedical applications and with a view to further assess the pharmacological profile of these class of compounds, three novel series of 1,2,3,4-tetrahydro-6-isopropyl-N-(substitutedphenyl)-2-oxo-4-(4-(phenoxy)methyl)phenyl)pyrimidine-5-carboxamide (AB-146 to AB-190) are synthesized. The synthesis of (AB-146 to AB-190) was achieved by acid catalysed cyclocondensation of N-(substitutedphenyl)-4-methyl-3-oxopentanamide, substituted urea and 4-(phenoxy)methyl)benzaldehyde. The products were characterized by FT-IR, mass spectra, $^1$H NMR and elemental analyses. The newly synthesized compounds were subjected to various biological activities viz., antimicrobial.
3.1.1 Reaction scheme for synthesized compounds (Scheme 1,2,3)

Scheme 1,2,3
Table 1.4 Physical properties of AB-146 to AB-160

<table>
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<tr>
<th>Code</th>
<th>R1</th>
<th>M.F.</th>
<th>M.W.</th>
<th>M.P. °C</th>
<th>Yield %</th>
<th>Rf</th>
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<td>2-OCH₃</td>
<td>C₂₉H₂₉N₃O₄</td>
<td>472</td>
<td>201</td>
<td>70</td>
<td>0.52</td>
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<tr>
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<td>3-Cl</td>
<td>C₂₇H₂₆ClN₃O₃</td>
<td>476</td>
<td>204</td>
<td>71</td>
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<td>C₂₇H₂₆FN₃O₃</td>
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<td>0.45</td>
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<tr>
<td>AB-149</td>
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<td>C₂₇H₂₅ClFN₃O₃</td>
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<td>210</td>
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<td>AB-157</td>
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TLC Solvent system Rf:- Hexane: Ethyl acetate – 6:4
Table 1.5 Physical properties of AB-161 to AB-175

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<td>AB-174</td>
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<td>AB-175</td>
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TLC Solvent system R<sub>f</sub>: Hexane: Ethyl acetate – 6:4
Table 1.6 Physical properties of AB-176 to AB-190

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<th>M.W.</th>
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<th>Yield %</th>
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<td>213</td>
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</table>

TLC Solvent system R₂f:- Hexane: Ethyl acetate – 6:4
3.1.2 Plausible Reaction Mechanism

The reaction mechanism of pyrimidine formation can be depicted as under (Scheme 4):

![Reaction Mechanism Diagram](image-url)
3.1.3 Experimental

3.1.3.1 Materials and Methods

Melting points were determined in open capillary tubes and are uncorrected. Formation of the compounds was routinely checked by TLC on silica gel-G plates of 0.5 mm thickness and spots were located by iodine. IR spectra were recorded Shimadzu FT-IR-8400 instrument using potassium bromide (KBr) pellet method. Mass spectra were recorded on Shimadzu GC-MS-QP-2010 model using Direct Injection Probe technique. 1H NMR was determined in DMSO-d6 solution on a Brucker AC 400 MHz spectrometer. Elemental analysis of all the synthesized compounds was carried out on elemental Vario EL III Carlo Erba 1108 model and the results are in agreement with the structures assigned.

3.1.3.2 Synthesis of N-(substitutedphenyl)-4-methyl-3-oxopentanamide

Syntheses of N-(substitutedphenyl)-4-methyl-3-oxopentanamides were achieved using previously published methods58.

3.1.3.3 General procedure for the synthesis of 1,2,3,4-tetrahydro-6-isopropyl-2-oxo-4-(4-(phenoxyethyl)phenyl)-N-(substitutedphenyl)pyrimidine-5-carboxamide (AB-146 to 160)

A mixture of N-(substitutedphenyl)-4-methyl-3-oxopentanamides (0.01 M), 4-(phenoxyethyl) benzaldehyde (0.01 M), urea (0.015 M) and catalytic amount of conc. hydrochloric acid (HCl) in ethanol (30 ml) was heated under reflux condition for 8 to 10 hrs. The reaction mixture was kept at room temperature for 24 hrs. The crystalline product obtained and recrystallized from ethanol.
3.1.3.3.1 1,2,3,4-tetrahydro-N-(2-methoxyphenyl)-6-isopropyl-2-oxo-4-(4-(phenoxy)methyl)phenyl)pyrimidine-5-carboxamide (AB-146)

Yield: 70%; mp 201°C; Anal. Calcd. for C$_{28}$H$_{25}$N$_3$O$_4$. C, 71.32; H, 6.20; N, 8.91; Found: C, 71.05; H, 6.04; N, 8.34%.

3.1.3.3.2 N-(3-chlorophenyl)-1,2,3,4-tetrahydro-6-isopropyl-2-oxo-4-(4-(phenoxy)methyl)phenyl)pyrimidine-5-carboxamide (AB-147)

Yield: 70%; mp 204°C; Anal. Calcd. for C$_{27}$H$_{23}$ClN$_3$O$_3$. C, 68.13; H, 5.51; Cl, 7.45; N, 8.83; Found: C, 68.00; H, 5.12; Cl, 7.24; N, 8.24%.
3.1.3.3.3 *N*-\((2\text{-fluorophenyl})\)-1,2,3,4-tetrahydro-6- isopropyl-2-oxo-4-(4-\(\text{phenoxymethyl}\)phenyl)pyrimidine-5-carboxamide (AB-148)

Yield: 59\%; mp 194°C; Anal. Calcd. for C_{27}H_{26}FN_{3}O_{3}: C, 70.57; H, 5.70; F, 4.13; N, 9.14; Found: C, 70.21; H, 5.21; F, 4.13; N, 9.01%; MS: m/z 460.

3.1.3.3.4 *N*-\((3\text{-chloro-4-fluorophenyl})\)-1,2,3,4-tetrahydro-6- isopropyl-2-oxo-4-(4-\(\text{phenoxymethyl}\)phenyl)pyrimidine-5-carboxamide (AB-149)

Yield: 70\%; mp 210°C; Anal. Calcd. for C_{27}H_{25}ClFN_{3}O_{3}: C, 65.65; H, 5.10; Cl, 7.18; F, 3.85; N, 8.51; Found: C, 65.24; H, 5.00; Cl, 7.01; F, 3.31; N, 8.13%; MS: m/z 494.

3.1.3.3.5 1,2,3,4-tetrahydro-\(N\)-(4-methoxyphenyl)-6- isopropyl-2-oxo-4-(4-\(\text{phenoxymethyl}\)phenyl)pyrimidine-5-carboxamide (AB-150)

Yield: 67\%; mp 205°C; Anal. Calcd. for C_{28}H_{26}N_{3}O_{4}: C, 71.32; H, 6.20; N, 8.91; Found: C, 71.04; H, 6.01; N, 8.21%.
3.1.3.3.6 \( N\)-(4-chlorophenyl)-1,2,3,4-tetrahydro-6- isopropyl -2-oxo-4-(4-(phenoxyethyl) phenyl)pyrimidine-5-carboxamide (AB-151)

Yield: 70%; mp 208°C; Anal. Calcd. for C\(_{27}\)H\(_{26}\)CIN\(_3\)O\(_3\): C, 68.13; H, 5.51; Cl, 7.45; N, 8.83; Found: C, 68.00; H, 5.12; Cl, 7.12; N, 8.24%; MS: m/z 476.

3.1.3.3.7 1,2,3,4-tetrahydro-6-isopropyl-2-oxo-4-(4-(phenoxyethyl) phenyl)-N-p-tolylpyrimidine-5-carboxamide (AB-152)

Yield: 53%; mp 203°C; Anal. Calcd. for C\(_{28}\)H\(_{28}\)N\(_3\)O\(_3\): C, 73.82; H, 6.42; N, 9.22; O, 11.23; Found: C, 73.42; H, 6.10; N, 9.01%.

3.1.3.3.8 \( N\)-(4-flourophenyl)-1,2,3,4-tetrahydro-6- isopropyl -2-oxo-4-(4-(phenoxyethyl) phenyl)pyrimidine-5-carboxamide (AB-153)

Yield: 74%; mp 198°C; Anal. Calcd. for C\(_{27}\)H\(_{26}\)F\(_3\)N\(_3\)O\(_3\): C, 70.57; H, 5.70; F, 4.13; N, 9.14; Found: C, 70.57; H, 5.70; F, 4.13; N, 9.14%; MS: m/z 460.
3.1.3.3.9 1,2,3,4-tetrahydro-1-propyl-2-oxo-4-(4-\((\text{phenoxy methyl})\)phenyl)pyrimidine-5-carboxamide (AB-154)

Yield: 56%; mp 191°C; Anal. Calcd. for C₂₇H₂₆ClN₃O₃: C, 68.13; H, 5.51; Cl, 7.45; N, 8.83; Found: C, 67.85; H, 5.15; Cl, 7.21; N, 8.31%; MS: m/z 476.

3.1.3.3.10 1,2,3,4-tetrahydro-1-propyl-2-oxo-4-(4-\((\text{phenoxy methyl})\)phenyl)pyrimidine-5-carboxamide (AB-155)

Yield: 54%; mp 224°C; Anal. Calcd. for C₂₇H₂₅Cl₂N₃O₃: C, 63.53; H, 4.94; Cl, 13.89; N, 8.23; Found: C, 63.24; H, 4.54; Cl, 13.31; N, 8.01%; MS: m/z 510.

3.1.3.3.11 1,2,3,4-tetrahydro-N-(3-methoxyphenyl)-6-\(\text{isopropyl-2-oxo-4-(4-(phenoxy methyl)phenyl)}\)pyrimidine-5-carboxamide (AB-156)

Yield: 70%; mp 210°C; Anal. Calcd. for C₂₉H₂₆N₃O₄: C, 71.32; H, 6.20; N, 8.91; Found: C, 71.13; H, 6.02; N, 8.34%.
3.1.3.3.12 1,2,3,4-tetrahydro-6- isopropyl -N-(2,4-dimethylphenyl)-2-oxo-4-(4-(phenoxy methyl)phenyl)pyrimidine-5-carboxamide (AB-157)

Yield: 66%; mp 227°C; Anal. Calcd. for

C_{29}H_{31}N_{3}O_{3}: C, 74.18; H, 6.65; N, 8.95; Found:

C, 74.01; H, 6.15; N, 8.45%; MS: m/z 470.

3.1.3.3.13 N-(4-bromophenyl)-1,2,3,4-tetrahydro-6- isopropyl -2-oxo-4-(4-(phenoxy methyl)phenyl)pyrimidine-5-carboxamide (AB-158)

Yield: 79%; mp 192°C; Anal. Calcd. for

C_{27}H_{25}BrN_{3}O_{3}: C, 62.31; H, 5.04; Br, 15.35; N, 8.07; Found: C, 62.02; H, 4.89; Br, 15.12; N, 8.00%; MS: m/z 520.
3.1.3.3.14 N-(3-bromophenyl)-1,2,3,4-tetrahydro-6-isopropyl-2-oxo-4-(4-(phenoxymethyl)phenyl)pyrimidine-5-carboxamide (AB-159)

Yield: 54%; mp 197°C; Anal. Calcd. for C_{27}H_{25}BrN_{2}O_{3}: C, 62.31; H, 5.04; Br, 15.35; N, 8.07; Found: C, 62.04; H, 4.85; Br, 15.15; N, 8.01%; MS: m/z 520.

3.1.3.3.15 1,2,3,4-tetrahydro-6-isopropyl-2-oxo-4-(4-(phenoxymethyl)phenyl)-N-(substitutedphenyl)-2-thioxopyrimidine-5-carboxamide (AB-160)

Yield: 71%; mp 211°C; Anal. Calcd. for C_{27}H_{27}N_{2}O_{3}: C, 73.45; H, 6.16; N, 9.52; Found: C, 73.22; H, 6.01; N, 9.12%; MS: m/z 442.

isopropyl-4-(4-(phenoxymethyl)phenyl)-N-(substitutedphenyl)-2-thioxopyrimidine-5-carboxamide (AB-161 to 175)

A mixture of N-(substituted phenyl)-3-oxobutanamides (0.01 M), 4-(phenoxymethyl) benzaldehydes (0.01 M), thiourea (0.015 M) and catalytic amount of conc. acid in ethanol (30 ml) was heated under reflux condition for 10 to 15 hrs. The reaction mixture was kept at room temperature for 24 hrs. The crystalline product obtained and recrystallized from ethanol.
3.1.3.4.1 1,2,3,4-tetrahydro-N-(2-methoxyphenyl)-6-isopropyl-2-oxo-4-(4-(phenoxy)methyl)phenyl)pyrimidine-5-carboxamide (AB-161)

Yield: 50%; mp 199°C; Anal. Calcd. for C₂₈H₂₅N₃O₃S: C, 68.97; H, 5.99; N, 8.62; Found: C, 68.67; H, 5.54; N, 8.34%.

3.1.3.4.2 N-(3-chlorophenyl)-1,2,3,4-tetrahydro-6-isopropyl-4-(4-(phenoxy)methyl)-2-thioxopyrimidine-5-carboxamide (AB-162)

Yield: 59%; mp 201°C; Anal. Calcd. for C₂₇H₂₅ClN₃O₂S: C, 65.91; H, 5.33; Cl, 7.21; N, 8.54; Found: C, 65.65; H, 5.11; Cl, 7.01; N, 8.21%.

3.1.3.4.3 N-(2-fluorophenyl)-1,2,3,4-tetrahydro-6-isopropyl-4-(4-(phenoxy)methyl)phenyl)-2-thioxopyrimidine-5-carboxamide (AB-163)

Yield: 71%; mp 212°C; Anal. Calcd. for C₂₇H₂₅FN₃O₂S: C, 68.19; H, 5.51; F, 3.99; N, 8.84; Found: C, 68.00; H, 5.15; F, 3.67; N, 8.34%; MS: m/z 476.
3.1.3.3.4N-(3-chloro-4-fluorophenyl)-1,2,3,4-tetrahydro-6-isopropyl-4-(4-(phenoxy-methyl)phenyl)-2-thioxopyrimidine-5-carboxamide (AB-164)

Yield: 65%; mp 202°C; Anal. Calcd. For C_{27}H_{26}ClFNO_{5}S: C, 63.58; H, 4.94; Cl, 6.95; F, 3.73; N, 8.24; Found: C, 63.12; H, 4.64; Cl, 6.54; F, 3.31; N, 8.01%; MS: m/z 510.

3.1.3.4.5 1,2,3,4-tetrahydro-N-(4-methoxyphenyl)-6-isopropyl-4-(4-(phenoxy-methyl)phenyl)-2-thioxopyrimidine-5-carboxamide (AB-165)

Yield: 79%; mp 205°C; Anal. Calcd. for C_{28}H_{28}N_{3}O_{5}S: C, 68.97; H, 5.99; N, 8.62; Found: C, 68.46; H, 5.61; N, 8.21%.

3.1.3.4.6 N-(4-chlorophenyl)-1,2,3,4-tetrahydro-6-isopropyl-4-(4-(phenoxy-methyl)phenyl)-2-thioxopyrimidine-5-carboxamide (AB-166)

Yield: 58%; mp 206°C; Anal. Calcd. for C_{27}H_{26}ClNO_{5}S: C, 65.91; H, 5.33; Cl, 7.21; N, 8.54; Found: C, 65.64; H, 5.15; Cl, 7.01; N, 8.11%; MS: m/z 492.
3.1.3.4.7 1,2,3,4-tetrahydro-6-isopropyl-4-(4-(phenoxy)methyl)phenyl)-2-thioxo-N(p-tolylpyrimidine)-5-carboxamide (AB-167)

Yield: 76%; mp 189°C; Anal. Calcd. for C_{28}H_{25}N_{3}O_{2}S: C, 71.31; H, 6.20; N, 8.91; Found: C, 71.05; H, 6.00; N, 8.64%.

3.1.3.4.8 N-(4-fluorophenyl)-1,2,3,4-tetrahydro-6-isopropyl-4-(4-(phenoxy)methyl)phenyl)-2-thioxopyrimidine-5-carboxamide (AB-168)

Yield: 58%; mp 196°C; Anal. Calcd. for C_{27}H_{26}FN_{3}O_{2}S: C, 68.19; H, 5.51; F, 3.99; N, 8.84; Found: C, 68.00; H, 5.24; F, 3.24; N, 8.34%; MS: m/z 476.

3.1.3.4.9 N-(2-chlorophenyl)-1,2,3,4-tetrahydro-6-isopropyl-4-(4-(phenoxy)methyl)phenyl)-2-thioxopyrimidine-5-carboxamide (AB-169)

Yield: 57%; mp 192°C; Anal. Calcd. for C_{27}H_{26}ClN_{3}O_{2}S: C, 65.91; H, 5.33; Cl, 7.21; N, 8.54; Found: C, 65.46; H, 5.05; Cl, 7.01; N, 8.12%; MS: m/z 492.
3.1.3.4.10  N-(3,4-dichlorophenyl)-1,2,3,4-tetrahydro-6-isopropyl-4-(4-(phenoxy)methyl)phenyl)-2-thioxopyrimidine-5-carboxamide (AB-170)

Yield: 75%; mp 197°C; Anal. Calcd. For C_{27}H_{25}Cl_{3}N_{3}O_{2}S: C, 61.60; H, 4.79; Cl, 13.47; N, 7.98; Found: C, 61.15; H, 4.34; Cl, 13.23; N, 7.32%; MS: m/z 526.

3.1.3.4.11  1,2,3,4-tetrahydro-N-(3-methoxyphenyl)-6-isopropyl-4-(4-(phenoxy)methyl)phenyl)-2-thioxopyrimidine-5-carboxamide (AB-171)

Yield: 69%; mp 192°C; Anal. Calcd. for C_{28}H_{22}N_{3}O_{3}S: C, 68.97; H, 5.99; N, 8.62; Found: C, 68.61; H, 5.67; N, 8.23%.

3.1.3.4.12  1,2,3,4-tetrahydro-6-isopropyl-N-(2,4-dimethylphenyl)-4-(4-(phenoxy)methyl)phenyl)-2-thioxopyrimidine-5-carboxamide (AB-172)

Yield: 74%; mp 205°C; Anal. Calcd. for C_{29}H_{23}N_{3}O_{2}S: C, 71.72; H, 6.43; N, 8.65; Found: C, 71.22; H, 6.13; N, 8.25%; MS: m/z 486.
3.1.3.4.13  **N-(4-bromophenyl)-1,2,3,4-tetrahydro-6-isopropyl-4-(4-<br>phenoxy)methyl)-phenyl)-2-thioxopyrimidine-5-carboxamide (AB-173)**<br><br>Yield: 52%; mp 208°C; Anal. Calcd. for C_{27}H_{25}BrN_{3}O_{2}S: C, 60.45; H, 4.88; Br, 14.89; N, 7.83; Found: C, 60.24; H, 4.64; Br, 14.45; N, 7.54%; MS: m/z 536.

3.1.3.4.14  **N-(3-bromophenyl)-1,2,3,4-tetrahydro-6-isopropyl-4-(4-<br>phenoxy)methyl)-phenyl)-2-thioxopyrimidine-5-carboxamide (AB-174)**<br><br>Yield: 72%; mp 211°C; Anal. Calcd. for C_{27}H_{25}BrN_{3}O_{2}S: C, 60.45; H, 4.88; Br, 14.89; N, 7.83; Found: C, 60.10; H, 4.58; Br, 14.34; N, 7.24%; MS: m/z 536.

3.1.3.4.15  **1,2,3,4-tetrahydro-6-isopropyl-4-(4-(phenoxy)methyl)phenyl)-<br>N-phenyl-2-thioxopyrimidine-5-carboxamide (AB-175)**

Yield: 56%; mp 202°C; Anal. Calcd. for C_{27}H_{27}N_{3}O_{2}S: C, 70.87; H, 5.95; N, 9.18; Found: C, 70.59; H, 5.67; N, 9.00%; MS: m/z 458.
3.1.3.5 General procedure for the synthesis of 1,2,3,6-tetrahydro-4-isopropyl-1-methyl-2-oxo-6-(4-(phenoxy)methyl)phenyl)N-(substituted phenyl) pyrimidine-5-carboxamide (AB-176 to 190)

A mixture of \(N\)-(substituted phenyl)-3-oxobutanamides (0.01...M), 4-(phenoxy)methyl)-benzaldehyde (0.01...M), \(N\)-methyl urea (0.015...M) and catalytic amount of conc. Acid in ethanol (30 ml) was heated under reflux condition for 12 to 13 hrs. The reaction mixture was kept at room temperature for 24 hrs. The crystalline product obtained and recrystallized from ethanol.

3.1.3.5.1 1,2,3,6-tetrahydro-N-(2-methoxyphenyl)-4-isopropyl-1-methyl-2-oxo-6-(4-(phenoxy)methyl)phenyl) pyrimidino-5-carboxamide (AB-176)

Yield: 59\%; mp 213°C; Anal. Calcd. for \(C_{29}H_{31}N_3O_4\): C, 71.73; H, 6.43; N, 8.65; Found: C, 71.36; H, 6.15; N, 8.24%.

3.1.3.5.2 \(N\)-(3-chlorophenyl)-1,2,3,6-tetrahydro-4-isopropyl-1-methyl-2-oxo-6-(4-(phenoxy)methyl)phenyl) pyrimidine-5-carboxamide (AB-177)

Yield: 70\%; mp 201°C; Anal. Calcd. for \(C_{28}H_{26}ClN_3O_3\): C, 68.63; H, 5.76; Cl, 7.24; N, 8.58; Found: C, 68.27; H, 5.38; Cl, 7.02; N, 8.22%.
3.1.3.5.3 1,2,3,4-tetrahydro-1-methyl-2-oxo-6-(4-(phenoxy methyl)phenyl)pyrimidine-5-carboxamide (AB-178)

Yield: 66\%; mp 201°C; Anal. Calcd. for C_{28}H_{28}FN_{3}O_{5}: C, 71.02; H, 5.96; F, 4.01; N, 8.87; Found: C, 70.86; H, 5.54; F, 4.01; N, 8.44%; MS: m/z 474.

3.1.3.5.4 1,2,3,4-tetrahydro-1-methyl-2-oxo-6-(4-(phenoxy methyl)phenyl)pyrimidine-5-carboxamide (AB-179)

Yield: 79\%; mp 200°C; Anal. Calcd. for C_{28}H_{27}ClF_{3}N_{3}O_{5}: C, 66.20; H, 5.36; Cl, 6.98; F, 3.74; N, 8.27; Found: C, 66.05; H, 5.12; Cl, 6.98; F, 3.74; N, 8.01%; MS: m/z 508.

3.1.3.5.5 1,2,3,6-tetrahydro-N-(4-methoxyphenyl)-1-methyl-2-oxo-6-(4-(phenoxy methyl)phenyl)pyrimidine-5-carboxamide (AB-180)

Yield: 75\%; mp 201°C; Anal. Calcd. for C_{28}H_{31}N_{3}O_{4}: C, 71.73; H, 6.43; N, 8.65; Found: C, 71.27; H, 6.25; N, 8.42%.
3.1.3.5.6 \( N-(4\text{-chlorophenyl})-1,2,3,6\text{-tetrahydro}-4\text{-isopropyl}-1\text{-methyl}-2\text{-oxo-6-(4-(phenoxymethyl)phenyl)pyrimidine-5-carboxamide (AB-181)} \)

Yield: 71\%; mp 191\(^\circ\)C; Anal. Calcd. for 
\[ \text{C}_{28}\text{H}_{26}\text{ClN}_{3}\text{O}_{3} \] 
C, 68.63; H, 5.76; Cl, 7.24; N, 8.58; Found: C, 68.28; H, 5.34; Cl, 7.01; N, 8.21%; MS: \( m/z \) 490.

3.1.3.5.7 \( 1,2,3,6\text{-tetrahydro}-4\text{-isopropyl}-1\text{-methyl}-2\text{-oxo-6-(4-(phenoxymethyl)phenyl)-N-(p-tolyl)pyrimidine-5-carboxamide (AB-182)} \)

Yield: 69\%; mp 200\(^\circ\)C; Anal. Calcd. for 
\[ \text{C}_{29}\text{H}_{32}\text{N}_{3}\text{O}_{3} \] 
C, 74.18; H, 6.65; N, 8.95; Found: C, 74.00; H, 6.24; N, 8.64%.

3.1.3.5.8 \( N-(4\text{-fluorophenyl})-1,2,3,6\text{-tetrahydro}-4\text{-isopropyl}-1\text{-methyl}-2\text{-oxo-6-(4-(phenoxymethyl)phenyl)pyrimidine-5-carboxamide (AB-183)} \)

Yield: 55\%; mp 204\(^\circ\)C; Anal. Calcd. for 
\[ \text{C}_{28}\text{H}_{29}\text{F}\text{N}_{3}\text{O}_{3} \] 
C, 71.02; H, 5.96; F, 4.01; N, 8.87; Found: C, 70.56; H, 5.49; F, 4.01; N, 8.42%; MS: \( m/z \) 474.
3.1.3.5.9 N-(2-chlorophenyl)-1,2,3,6-tetrahydro-4-isopropyl-1-methyl-2-
3 4-oxo-6-(4-(phenoxy)methyl)phenyl) pyrimidine-5-carboxamide (AB-184)
Yield: 70%; mp 213°C; Anal. Calcd. for
C_{26}H_{28}ClN_{3}O_{3}; C, 68.63; H, 5.76; Cl, 7.24; N, 8.58; Found: C, 68.15; H, 5.31; Cl, 7.24; N, 8.21%; MS: m/z 490.

3.1.3.5.10 N-(3,4-dichlorophenyl)-1,2,3,6-tetrahydro-4-isopropyl-1-methyl-
3 4-2-oxo-6-(4-(phenoxy)methyl)phenyl) pyrimidine-5-carboxamide (AB-185)
Yield: 71%; mp 224°C; Anal. Calcd. for
C_{26}H_{27}Cl_{2}N_{3}O_{3}; C, 64.13; H, 5.19; Cl, 13.52; N, 8.01; Found: C, 64.00; H, 5.05; Cl, 13.12; N, 7.89%; MS: m/z 524.

3.1.3.5.11 1,2,3,6-tetrahydro -N-(3-methoxyphenyl)-4-isopropyl-1-methyl-
3 4-2-oxo-6-(4-(phenoxy)methyl)phenyl) pyrimidine-5-carboxamide (AB-186)
Yield: 55%; mp 205°C; Anal. Calcd. for
C_{26}H_{31}N_{3}O_{4}; C, 71.73; H, 6.43; N, 8.65; Found: CC, 71.34; H, 6.10; N, 8.33%. 

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3.1.3.5.12 1,2,3,6-tetrahydro-4-isopropyl-1-methyl-N-(2,4-dimethylphenyl)-2-oxo-6-(4-(phenoxymethyl)phenyl)pyrimidine-5-carboxamide (AB-187)
Yield: 74%; mp 200°C; Anal. Calcd. for C₃₀H₃₅N₃O₅; C, 74.51; H, 6.88; N, 8.69; Found: C, 74.19; H, 6.43; N, 8.23%; MS: m/z 484.

3.1.3.5.13 N-(4-bromophenyl)-1,2,3,6-tetrahydro-4-isopropyl-1-methyl-2-oxo-6-(4-(phenoxymethyl)phenyl)pyrimidine-5-carboxamide (AB-188)
Yield: 67%; mp 191°C; Anal. Calcd. for C₂₈H₂₈BrN₃O₅; C, 62.93; H, 5.28; Br, 14.95; N, 7.86; Found: C, 62.04; H, 5.13; Br, 14.34; N, 7.43%; MS: m/z 534.

3.1.3.5.14 N-(3-bromophenyl)-1,2,3,6-tetrahydro-4-isopropyl-1-methyl-2-oxo-6-(4-(phenoxymethyl)phenyl)pyrimidine-5-carboxamide (AB-189)
Yield: 78%; mp 211°C; Anal. Calcd. for C₂₉H₂₉BrN₃O₅; C, 62.93; H, 5.28; Br, 14.95; N, 7.86; Found: C, 62.27; H, 5.09; Br, 14.29; N, 7.27%; MS: m/z 534.
3.1.3.5.15 1,2,3,6-tetrahydro-4-isopropyl-1-methyl-2-oxo-6-(4-(phenoxy)methyl phenyl)-N-phenylpyrimidine-5-carboxamide (AB-190)

Yield: 70%; mp 202°C; Anal. Calc'd for C$_{28}$H$_{20}$N$_3$O$_3$: C, 73.82; H, 6.42; N, 9.22; Found: C, 73.57; H, 6.13; N, 9.00%; MS: m/z 456.