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<th>S. No.</th>
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<th>Temp °C</th>
<th>Time (h)</th>
<th>Yield%</th>
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</table>

a Aryl boronic acid (1.0 mmol), aryI bromide (1.0 mmol), Catalyst (1.0 mol%), 2 mL H₂O, Na₂CO₃ (2.0 mmol).  
b Yields are isolated yields and an average of two runs.  
c Catalyst concentration (0.5 mol%- TON: 178).  
d Catalyst concentration (0.1 mol%- TON: 580).  
e Catalyst concentration (0.05 mol%- TON: 900).  
f Instead of 4-Bromoanisole, 4-iodoanisole was employed as the substrate.
Table 2: Scope study for Suzuki-Miyaura cross-coupling of (hetero)aryl halides $^{a,b}$

$$
\text{Arly halide} + \text{Arly Boronic Acid} \xrightarrow{\text{Precatalyst 4 (1.0 mol%)}} \text{Product}
$$

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Aryl halide</th>
<th>Aryl Boronic Acid</th>
<th>Product</th>
<th>Time h</th>
<th>Yield%</th>
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<td>(HO)$_2$B-$\text{Me}$</td>
<td>MeO-$\text{Me}$</td>
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<tr>
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<td>(HO)$_2$B-$\text{Me}$</td>
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<td>(HO)$_2$B-$\text{Me}$</td>
<td>$\text{N}$-$\text{Me}$</td>
<td>2.0</td>
<td>69</td>
</tr>
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</table>
**a** Aryl boronic acid (1.0 mmol), aryl bromide (1.0 mmol), Catalyst (1.0 mol%), 2 mL H₂O, Na₂CO₃ (2.0 mmol). **b** Isolated yields.
Scheme 2: Recycling studies for precatalyst 4.
Representative procedure for Suzuki-Miyaura cross-coupling of aryl (heteroaryl)bromides:

A solution of precatalyst 4 (0.01 mmol, 1.0 mol%) in degassed H₂O (2.0 mL) was stirred for 5 min at ambient temperature under N₂. Then, 4-bromoanisole (187 mg, 1.0 mmol) was added via syringe and the solution stirred for 5 min. Thereafter, 4-methylphenyl boronic acid (136 mg, 1.1 mmol) was added along with Na₂CO₃ (2.0 mmol), and the resulting solution was stirred at 50 °C for 0.5 h. At ambient temperature, more H₂O (10 mL) was added and the organic products were extracted with EtOAc (3 x 10 mL). The combined organic layers were concentrated in vacuo and the remaining residue was purified by column chromatography (n-hexane/EtOAc: 200/1) to yield 4-Methoxy-4'-biphenyl (97%) as a colorless solid.

![4-Methoxy-4'-biphenyl](image)

4-Methoxy-4'-methylbiphenyl: ¹H-NMR (300 MHz, CDCl₃): δ = 7.43 (d, J = 8.2 Hz, 2H), 7.42 (d, J = 8.3 Hz, 2H), 7.19 (d, J = 7.9 Hz, 2H), 7.00-6.87 (m, 2H), 3.87 (s, 3H), 2.35 (s, 3H). ¹³C-NMR (75 MHz, CDCl₃): δ = 158.7, 137.8, 136.3, 133.7, 129.4, 127.9, 126.6, 114.1, 55.3, 21.0. MS (EI) m/z (relative intensity) 198 (100) [M⁺]. The spectral data were in accordance with those reported in the literature.

![4-Methoxy-4'-methylbiphenyl](image)

1-(2′-Methoxyphenyl)naphthalene: ¹H-NMR (300 MHz, CDCl₃): δ = 7.87 (t, J = 7.5 Hz, 2H), 7.59 (d, J = 8.2 Hz, 1H), 7.53-7.48 (m, 1H), 7.50-7.34 (m, 4H), 7.29-7.26 (m, 1H), 7.12-7.01 (m, 2H), 3.69 (s, 3H). ¹³C-NMR (75 MHz, CDCl₃): δ = 157.2, 136.9, 133.4, 132.0, 131.9, 129.5, 128.9, 128.0, 127.6, 127.2, 126.4, 125.6, 125.5, 125.3, 120.5, 110.9, 55.5. MS (EI), m/z (relative
The spectral data were in accordance with those reported in the literature.

**2-(2′-Methoxyphenyl)naphthalene**: $^1$H-NMR (300 MHz, CDCl$_3$): $\delta$ = 7.96 (s, 1H), 7.91–7.82 (m, 3H), 7.70–7.65 (m,1H), 7.50–7.32 (m, 4H), 7.11-7.00 (m, 2H), 3.83 (s, 3H). $^{13}$C-NMR (75 MHz, CDCl$_3$): $\delta$ = 156.7, 136.2, 133.4, 132.4, 131.1, 130.7, 128.8, 128.1, 128.0, 127.9, 127.1, 125.9, 125.8, 120.9, 111.3, 55.6. MS (EI) $m$/z (relative intensity) 234 (94) [M$^+$]. The spectral data were in accordance with those reported in the literature.

**2-Methoxy-2′-methylbiphenyl**: $^1$H-NMR (300 MHz, CDCl$_3$): $\delta$ = 7.417-36 (m, 1H), 7.35–7.20 (m, 5H), 7.08-7.02 (m,1H), 7.03 (d, $J$ = 8.2 Hz, 1H), 3.82 (s, 3H), 2.22 (s, 3H). $^{13}$C-NMR (75 MHz, CDCl$_3$): $\delta$ = 156.4, 138.5, 136.7, 130.9, 130.8, 129.9, 129.4, 128.4, 127.2, 125.3, 120.3, 110.6, 55.4, 20.0. MS (EI) $m$/z (relative intensity) 198 (100) [M$^+$]. The spectral data were in accordance with those reported in the literature.

**2-Methoxy-3′,4′,5′-trimethoxybiphenyl**: $^1$H-NMR (300 MHz, CDCl$_3$): $\delta$ = 7.32-7.26 (m, 2H), 7.04-6.91 (m, 2H), 6.76 (s, 2H), 3.87 (s, 3H), 3.85 (s, 6H), 3.84 (s, 3H). $^{13}$C-NMR (75 MHz, CDCl$_3$): $\delta$ = 156.2, 152.7, 137.0, 134.0, 130.7, 130.5, 128.6, 120.8, 111.2, 106.8, 60.8, 56.1,
55.6. MS (EI), m/z (relative intensity) 274 (100) [M⁺]. The spectral data were in accordance with those reported in the literature.

![Pyridine](image)

**2-(4-Fluorophenyl)pyridine:** ¹H NMR (300 MHz, CDCl₃): δ = 8.67-8.61 (m, 1H), 8.03–7.93 (m, 2H), 7.77–7.62 (m, 2H), 7.24 – 7.10 (m, 3H). ¹³C NMR (75 MHz, CDCl₃): δ = 163.4, 156.4, 149.6, 136.8, 135.5, 128.6, 122.0, 120.2, 115.6. MS (EI) m/z (relative intensity) 173 (100) [M⁺]. The spectral data were in accordance with those reported in the literature.

![Quinoline](image)

**6-(4′-Methoxyphenyl)quinoline:** ¹H-NMR (300 MHz, CDCl₃): δ = 8.89-8.84 (m, 1H), 8.18-8.12 (m, 2H), 7.96-7.92 (m, 2H), 7.66 (d, J = 8.1 Hz, 2H), 7.41-7.37 (m, 1H), 7.02 (d, J = 8.1 Hz, 2H), 3.86 (s, 3H). ¹³C-NMR (100 MHz, CDCl₃): δ = 159.5, 150.0, 147.4, 138.9, 136.1, 132.7, 129.7, 129.0, 128.5, 128.4, 124.6, 121.4, 114.4, 55.4. MS (EI), m/z (relative intensity) 235 (100) [M⁺]. The spectral data were in accordance with those reported in the literature.

![Pyridine](image)

**2-(4-Methoxyphenyl)pyridine:** ¹H-NMR(300 MHz, CDCl₃): δ = 8.63-8.58 (m, 1H), 7.93 (d, J = 8.5 Hz, 2H), 7.73–7.61 (m, 2H), 7.14 (m, 1H), 6.98 (d, J = 8.5 Hz, 2H), 3.84 (s, 3H). ¹³C-NMR(75 MHz, CDCl₃): δ = 160.6, 157.3, 149.7, 136.8, 132.2, 128.3, 121.5, 119.9, 114.3, 55.5.
MS (EI) m/z (relative intensity) 185 (100) [M⁺]. The spectral data were in accordance with those reported in the literature.

6-(4’-Methylphenyl)quinoline:
\[
\begin{align*}
\text{1H-NMR} \ (300 \ MHz, \ CDCl_3): \ & \delta = 8.90-8.85 \ (m, \ 1H), \ 8.18-8.14 \ (m, \ 2H), \ 7.98-7.95 \ (m, \ 2H), \ 7.60 \ (d, \ J = 8.1 \ Hz, \ 2H), \ 7.41-7.37 \ (m, \ 1H), \ 7.29 \ (d, \ J = 8.1 \ Hz, \ 2H), \ 2.41 \ (s, \ 3H). \\
\text{13C-NMR} \ (100 \ MHz, \ CDCl_3): \ & \delta = 150.1, \ 147.5, \ 139.1, \ 137.6, \ 137.3, \ 136.1, \ 129.7, \ 129.6, \ 129.1, \ 128.4, \ 127.2, \ 125.0, \ 121.3, \ 21.1. \\
\text{MS (EI), m/z (relative intensity) 219 (100) [M⁺]. The spectral data were in accordance with those reported in the literature.}
\end{align*}
\]

2-{4-(Trifluoromethyl)phenyl}pyridine:
\[
\begin{align*}
\text{1H NMR} \ (300 \ MHz, \ CDCl_3): \ & \delta = 8.80–8.66 \ (m, \ 1H), \ 8.11 \ (d, \ J = 8.2 \ Hz, \ 2H), \ 7.87–7.65 \ (m, \ 4H), \ 7.30-7.27 \ (m, \ 1H). \text{13C NMR} \ (75 \ MHz, \ CDCl_3): \ & \delta = 155.8, \ 149.9, \ 142.6, \ 136.8, \ 130.9, \ 127.1, \ 125.6, \ 124.2, \ 122.9, \ 120.8. \text{MS (El) m/z (relative intensity) 223 (100) [M⁺]. The spectral data were in accordance with those reported in the literature.}
\end{align*}
\]
**4-(4-Methoxyphenyl)-2H-benzopyran-2-one**: $^1$H NMR (300 MHz, CDCl$_3$) $\delta$ 3.80 (s, 3H), 6.30 (s, 1H), 7.05 (d, $J = 9.0$ Hz, 2H), 7.21-7.27 (m, 1H), 7.38-7.44 (m, 3H), 7.51-7.58 (m, 2H); $^{13}$C NMR (75 MHz) $\delta$ 161.0, 160.9, 155.4, 154.3, 131.9, 130.1, 127.5, 126.0, 124.1, 119.2, 117.4, 114.6, 114.4, 55.5. MS (EI) $m/z$ (relative intensity) 253 (100, M + H$^+$). The spectral data were in accordance with those reported in the literature.

![4-(4-Methoxyphenyl)-2H-benzopyran-2-one](image)

**4-(4-tert-Butylphenyl)-2H-benzopyran-2-one**: M.p. 112-113 °C.$^1$H NMR (300 MHz, CDCl$_3$) $\delta$ 1.30 (s, 9H), 6.30 (s, 1H), 7.13-7.18 (m, 1H), 7.31-7.38 (m, 3H), 7.44-7.57 (m, 4H); $^{13}$C NMR (75 MHz) $\delta$ 161.0, 155.7, 154.2, 153.1, 132.3, 130.1, 128.3, 127.2, 126.0, 124.1, 119.1, 117.3, 114.9, 34.5, 31.3. MS (EI) $m/z$ (relative intensity) 278 (100, M$^+$). The spectral data were in accordance with those reported in the literature.

![4-(4-tert-Butylphenyl)-2H-benzopyran-2-one](image)

**4-(4-tert-Butylphenyl)-6-methyl-2-pyranone**: $^1$H NMR (500 MHz, CDCl$_3$) 7.70 (d, $J = 7.4$ Hz, 2H), 7.49 (d, $J = 7.4$ Hz, 2H, 6.69 (s, 1H), 6.44 (s, 1H), 2.26 (s, 3H), 1.28 (s, 9H); $^{13}$C NMR (125 MHz, CDCl$_3$) 162.8, 162.6, 154.8, 154.1, 132.3, 127.1, 126.3, 106.6, 103.1, 35.0, 31.3, 20.0; MS (EI) $m/z$ (relative intensity) 242 (100, M$^+$); The spectral data were in accordance with those reported in the literature.
4-(4-Methylphenyl)-6-methyl-2-pyranone: $^1$H NMR (500 MHz, CDCl$_3$): 7.68 (d, J = 7.9 Hz, 2H), 7.30 (d, J = 7.9 Hz, 2H), 6.70 (s, 1H), 6.44 (s, 1H), 2.34 (s, 3H), 2.26 (s, 3H); $^{13}$C NMR (125 MHz, CDCl$_3$): 162.9, 162.6, 154.8, 141.3, 132.2, 130.1, 127.3, 106.4, 103.0, 21.3, 20.0; MS (EI) m/z (relative intensity) 200 (100, M$^+$); The spectral data were in accordance with those reported in the literature.

General procedure for Recycling studies of aryl bromides with aryl boronic acids using precatalyst: A solution of precatalyst 4 (0.01 mmol, 1.0 mol%) in degassed H$_2$O (2.0 mL) was stirred for 5 min at ambient temperature under N$_2$. Then, 4-bromoanisole (187 mg, 1.0 mmol) was added via syringe and the solution stirred for 5 min. Thereafter, 4-methylphenyl boronic acid (136 mg, 1.1 mmol) was added along with Na$_2$CO$_3$ (2.0 mmol), and the resulting solution was stirred at 50 °C for 0.5 h. At ambient temperature, the organic products were extracted with EtOAc (2 x 10 mL). The catalytic aqueous layer was recharged with substrates, base and the reaction was again continued for the reported time at 50 °C.
General procedure for Suzuki-Miyaura cross-coupling of 5-iodo-2′-deoxyuridine with aryl boronic acids: A solution of precatalyst 3 (0.005 mmol, 1.0 mol%) in degassed H₂O (1.0 mL) was stirred for 5 min at ambient temperature under N₂. Then, 5-iodo-2′-deoxyuridine (177 mg, 0.5 mmol) was added and the solution stirred for 5 min at 80 °C. Thereafter, phenyl boronic acid (90 mg, 0.75 mmol) was added along with Et₃N (1.0 mmol) and degassed water (2.0 mL). The resulting solution was then stirred at 80 °C for 6.0 h. After the completion of reaction the solvent was removed under vacuo and the resultant residue obtained was purified using column chromatography in CH₂Cl₂: MeOH solvent system (96:4) to afford the desired product as a white solid.

![Chemical structure](image)

5-Phenyl-2′-deoxyuridine: White solid. ¹H (400 MHz, DMSO-d₆) 11.53 (s, 1H), 8.18 (s, 1H), 7.55 (d, 2H, J = 7.4 Hz), 7.38–7.27 (m, 3H), 6.27 (t, 1H, J = 6.5 Hz), 5.24 (d, 1H, J = 4.0 Hz), 5.14 (t, 1H, J = 4.5 Hz), 4.31 (s, 1H), 3.82 (d, 1H, J = 2.8 Hz), 3.65–3.56 (m, 2H), 2.29–2.12 (m, 2H). ¹³C (101 MHz, DMSO-d₆) 162.4, 150.3, 138.3, 133.5, 128.4, 128.2, 127.5, 113.7, 87.8, 84.7, 70.5, 61.2, 40.1. MS (ESI): m/z = 305 [M + H⁺], 327 [M + Na⁺]. The spectral data were in accordance with those reported in the literature.
5-(4-Chlorophenyl)-2'-deoxyuridine: $^1$H NMR (400 MHz, DMSO-d$_6$) $\delta$ 11.56 (s, 1H), 8.27 (s, 1H), 7.59 (dd, 2H, $J = 8.7$, 5.2 Hz), 7.43 (dd, 2H, $J = 8.8$, 5.4 Hz), 6.22 (t, 1H, $J = 6.5$ Hz), 5.26 (d, 1H, $J = 4.0$ Hz), 5.14 (t, 1H, $J = 4.5$ Hz), 4.29-4.27 (m, 1H), 3.82 (q, 1H, $J = 3.1$ Hz), 3.65-3.56 (m, 2H), 2.28-2.13 (m, 2H). $^{13}$C NMR (101 MHz, DMSO-d$_6$) $\delta$ 162.3, 150.1, 132.4, 132.0, 129.8, 128.4, 112.4, 87.7, 84.8, 70.3, 61.0, 40.1. MS (ESI): m/z = 339 [M + H$^+$], 361 [M + Na$^+$].

5-(4-Fluorophenyl)-2'-deoxyuridine: $^1$H NMR (400 MHz, DMSO-d$_6$) $\delta$ 11.53 (s, 1H), 8.20 (s, 1H), 7.58 (dd, 2H, $J = 8.4$, 5.1 Hz), 7.20 (dd, 2H, $J = 8.7$, 5.3 Hz), 6.23 (t, 1H, $J = 6.5$ Hz), 5.26 (d, 1H, $J = 4.1$ Hz), 5.12 (t, 1H, $J = 4.4$ Hz), 4.31-4.26 (m, 1H), 3.81 (q, 1H, $J = 3.1$ Hz), 3.62-3.58 (m, 2H), 2.27-2.13 (m, 2H). $^{13}$C NMR (100 MHz, DMSO-d$_6$) $\delta$ 162.3, 161.8 (d, 1C, $J_{C,F} = 185.4$ Hz), 150.0, 138.1, 129.7 (d, 2C, $J_{C,F} = 7.9$ Hz), 129.2 (d, 1C, $J_{C,F} = 3.4$ Hz), 115.0 (d, 2C, $J_{CF} = 21.2$ Hz), 112.5, 87.6, 84.5, 70.2, 60.9, 40.0. MS (ESI): m/z = 323 [M + H$^+$], 345 [M + Na$^+$].

5-(3-Methoxyphenyl)-2'-deoxyuridine: $^1$H NMR (400 MHz, DMSO-d$_6$) $\delta$ 11.51 (s, 1H), 8.21 (s, 1H), 7.27 (t, 1H, $J = 7.9$ Hz), 7.15 (s, 1H), 7.12 (d, 1H, $J = 7.9$ Hz), 6.88 (dd, 1H, $J = 6.9$, 2.2 Hz, 2H), 7.18 (t, 1H, $J = 7.9$ Hz), 7.05 (dd, 2H, $J = 8.7$, 5.3 Hz), 6.26 (t, 1H, $J = 6.5$ Hz), 5.27 (d, 1H, $J = 4.0$ Hz), 5.13 (t, 1H, $J = 4.5$ Hz), 4.28-4.27 (m, 1H), 3.81 (q, 1H, $J = 3.1$ Hz), 3.65-3.56 (m, 2H), 2.26-2.13 (m, 2H). $^{13}$C NMR (101 MHz, DMSO-d$_6$) $\delta$ 162.4, 150.1, 132.4, 132.0, 129.8, 128.4, 112.4, 87.7, 84.8, 70.3, 61.0, 40.1. MS (ESI): m/z = 339 [M + H$^+$], 361 [M + Na$^+$].
Hz), 6.24 (t, 1H, J = 6.4 Hz), 5.27 (d, 1H, J = 4.1 Hz), 5.12 (t, 1H, J = 4.3 Hz), 4.30-4.27 (m, 1H), 3.83-3.81 (m, 1H), 3.76 (s, 3H), 3.60 (ddd, 2H, J = 24.3, 12.0, 3.1 Hz), 2.27-2.13 (m, 2H).

$^{13}$C NMR (101 MHz, DMSO-d$_6$) δ 162.1, 159.1, 150.0, 138.3, 134.0, 129.2, 120.2, 113.5, 113.5, 112.8, 87.6, 84.6, 70.3, 61.0, 55.0, 40.1. MS (ESI): m/z = 335 [M + H$^+$], 357 [M + Na$^+$].

5-(1-Naphthyl)-2'-deoxyuridine: White solid. NMR $^1$H (400 MHz, DMSO-d$_6$) δ = 11.57 (s, 1H), 8.03 (s, 1H), 7.96–7.93 (m, 2H), 7.73 (d, 1H, J = 8.0 Hz), 7.54-7.46 (m, 3H), 7.40-7.38 (m, 1H), 6.28 (t, 1H, J = 6.2 Hz), 5.24 (d, 1H, J = 2.1 Hz), 4.85-4.83 (m, 1H), 3.77 (d, 1H, J = 2.6 Hz), 3.48-3.45 (m, 1H), 2.27–2.15 (m, 2H). $^{13}$C NMR (101 MHz, DMSO-d$_6$) δ = 162.6, 150.5, 139.5, 133.2, 132.1, 131.4, 128.4, 128.2, 126.1, 125.9, 125.5, 113.7, 87.5, 84.4, 70.4, 61.0, 40.1. MS (ESI): m/z = 355 [M + H$^+$], 377 [M + Na$^+$].

5-(2-Naphthyl)-2'-deoxyuridine: White solid. NMR $^1$H (400 MHz, DMSO-d$_6$) δ = 11.59 (s, 1H), 8.37 (s, 1H), 8.14 (s, 1H), 7.93–7.88 (m, 3H), 7.71-7.68 (m, 1H), 7.54-7.48 (m, 2H), 6.27 (t, 1H, J = 6.2 Hz), 5.28 (d, 1H, J = 1.9 Hz), 5.19-5.17 (m, 1H), 4.32 (s, 1H), 3.84 (d, 1H, J = 2.8 Hz), 3.67-3.58 (m, 2H), 2.33–2.15 (m, 2H). $^{13}$C NMR (101 MHz, DMSO-d$_6$) δ = 162.4, 150.0, 138.6, 132.9, 132.1, 130.9, 128.1, 127.4, 126.5, 126.3, 126.2, 126.1, 113.3, 87.5, 84.6, 70.1, 60.9,
40.1. MS (ESI): m/z = 355 [M + H⁺], 377 [M + Na⁺]. The spectral data were in accordance with those reported in the literature.

5-(2-Methoxyphenyl)-2′-deoxyuridine: White solid. NMR 1H (400MHz, DMSO-d₆) δ = 11.39 (s, 1H), 7.91 (s, 1H), 7.26 (t, 1H, J = 7.6 Hz), 7.20 (dd, 1H, J = 7.1, 0.9 Hz), 7.01 (d, 1H, J = 8.2 Hz), 6.92 (t, 1H, J = 7.2 Hz), 6.23 (t, 1H, J = 7.2 Hz), 5.22 (s, 2H), 4.89 (s, 1H), 4.22 (s, 1H), 3.70 (s, 3H), 3.50 (d, 2H, J = 2.0 Hz), 3.32 (s, 2H), 2.17-2.11 (m, 2H). 13C NMR (101 MHz, DMSO-d₆) δ = 161.9, 157.2, 150.3, 139.0, 131.3, 129.2, 121.9, 120.1, 111.4, 87.5, 84.2, 70.6, 61.3, 55.4, 40.1. MS (ESI): m/z = 335 [M + H⁺], 357 [M + Na⁺]. The spectral data were in accordance with those reported in the literature.

5-(4-Trifluorophenyl)-2′-deoxyuridine: 1H NMR (400 MHz, DMSO-d₆) δ 11.61 (s, 1H), 8.40 (s, 1H), 7.81-7.78 (m, 2H), 7.72-7.70 (m, 2H), 6.24-6.20 (m, 1H), 5.27-5.15 (m, 2H), 4.31-4.29 (m, 1H), 3.83-3.81 (m, 1H), 3.67-3.57 (m, 2H), 2.30-2.15 (m, 2H). 13C NMR (100 MHz, DMSO-d₆) δ . MS (ESI): m/z = 373 [M + H⁺], 395 [M + Na⁺].
5-(4-Nitrophenyl)-2’-deoxyuridine: $^1$H NMR (400 MHz, DMSO-d$_6$) $\delta$ 11.68 (s, 1H), 8.53-8.49 (m, 1H), 8.23-8.17 (m, 2H), 7.91-7.88 (m, 2H), 6.22-6.20 (m, 1H), 5.27-5.22 (m, 2H), 4.31 (s, 1H), 3.83-3.81 (m, 1H), 3.66-3.63 (m, 2H), 2.27-2.21 (m, 2H). $^{13}$C NMR (100 MHz, DMSO-d$_6$) $\delta$ MS (ESI): m/z = 350 [M + H$^+$], 372 [M + Na$^+$].

5-(4-Methoxyphenyl)-2’-deoxyuridine: $^1$H NMR (400 MHz, DMSO-d$_6$) $\delta$ 11.45 (s, 1H), 8.10 (s, 1H), 7.48 (d, J = 7.9 Hz, 2H), 6.92 (d, J = 7.8 Hz, 2H), 5.25-5.23 (m, 1H), 5.10-5.08 (m, 1H), 4.30-4.27 (m, 1H), 3.81-3.79 (m, 1H), 3.76 (s, 3H), 3.76-3.55 (m, 2H), 2.26-2.11 (m, 2H). $^{13}$C NMR (100 MHz, DMSO-d$_6$) $\delta$. MS (ESI): m/z = 335 [M + H$^+$], 357 [M + Na$^+$].

5-(3-Nitrophenyl)-2’-deoxyuridine: $^1$H NMR (400 MHz, DMSO-d$_6$) $\delta$ 11.67 (s, 1H), 8.52-8.46 (m, 2H), 8.17-8.14 (m, 1H), 7.99-7.97 (m, 1H), 7.68-7.64 (m, 1H), 6.23-6.20 (m, 1H), 5.28-5.17 (m, 2H), 4.31 (s, 1H), 3.84-3.82 (m, 1H), 3.67-3.58 (m, 2H), 2.30-2.16 (m, 2H). $^{13}$C NMR (100 MHz, DMSO-d$_6$) $\delta$. MS (ESI): m/z = 350 [M + H$^+$], 372 [M + Na$^+$].
5-(4- trifluoromethoxyphenyl)-2’-deoxyuridine: $^1$H NMR (400 MHz, DMSO-d$_6$) $\delta$ 11.57 (s, 1H), 8.28 (s, 1H), 7.68-7.66 (m, 2H), 7.37-7.35 (m, 2H), 6.24-6.21 (m, 1H), 5.26-5.12 (m, 2H), 4.30-4.28 (m, 1H), 3.83-3.81 (m, 1H), 3.67-3.56 (m, 2H), 2.29-2.13 (m, 2H). $^{13}$C NMR (100 MHz, DMSO-d$_6$) $\delta$. MS (ESI): m/z = 389 [M + H$^+$], 411 [M + Na$^+$].

5-Phenyl-2’-deoxycytidine: $^1$H NMR (400 MHz, DMSO-d$_6$) $\delta$ 7.88 (s, 1H), 7.42-7.33 (m, 6H), 6.44 (s, 1H), 6.20 (t, $J = 6.2$ Hz, 1H), 5.21-5.19 (m, 1H), 4.96 (s, 1H), 4.22 (s, 1H), 3.77 (s, 1H), 3.54-3.51 (m, 2H), 2.13-2.05 (m, 2H). $^{13}$C NMR (100 MHz, DMSO-d$_6$) $\delta$ 163.1, 154.3, 140.2, 133.7, 129.0, 128.8, 127.6, 107.7, 87.3, 85.1, 70.1, 61.0, 40.5. MS (ESI): m/z = 304 [M + H$^+$], 326 [M + Na$^+$].
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