Errata

Synthesis and characterization of low-molecular Fibroblast Activation Protein inhibitors based on (*S*)-2-oxo-2-(pyrrolidin-2-yl)acetamide

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At the end of the last paragraph, add:

"In the case of diastereomeric mixtures of α-hydroxyamides **4**, **5**, **6**, **7**, **26** and **27**, NMR signals are reported only for the major diastereomer."

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Replace ^{1}H NMR data for compound **(4)** with:

"^{1}H NMR (400 MHz, $CDCl_3$) δ 7.43 (bt, *J* = 5.8 Hz, 1H), 7.28 – 7.18 (m, 5H), 5.92 (bt, *J* = 4.9 Hz, 1H), 5.54 (bs, 1H), 5.02 (d, *J* = 2.2 Hz, 2H), 4.20 (bd, *J* = 2.3 Hz, 1H), 4.09 (q, *J* = 7.2 Hz, 2H), 3.91 – 3.85 (m, 4H), 3.45 – 3.28 (m, 2H), 2.23 – 2.12 (m, 1H), 2.03 – 1.87 (m, 2H), 1.87 – 1.70 (m, 2H), 1.17 (t, *J* = 7.2 Hz, 3H)."

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Replace ^{1}H NMR data for compound **(5)** with:

"^{1}H NMR (400 MHz, $CDCl_3$) δ 8.04 – 7.90 (m, 1H), 7.65 (bt, *J* = 6.6 Hz, 2H), 4.53 (d, *J* = 2.2 Hz, 1H), 4.02 (q, *J* = 7.2 Hz, 2H), 3.91 – 3.79 (m, 4H), 3.35 – 3.15 (m, 2H), 2.08 – 2.00 (m, 1H), 1.99 – 1.87 (m, 2H), 1.87 – 1.65 (m, 2H), 1.11 (t, *J* = 7.1 Hz, 3H)."

Replace ^{1}H NMR data for compound **(6)** with:

"^{1}H NMR (400 MHz, $CDCl_3$) δ 9.75 (bs, 1H), 9.19 – 9.11 (m, 1H), 8.46 (bt, *J* = 5.0 Hz, 1H), 8.38 (d, *J* = 8.6 Hz, 1H), 8.25 (d, *J* = 8.5 Hz, 1H), 7.99 – 7.93 (m, 1H), 7.93 – 7.85 (m, 1H), 7.77 – 7.70 (m, 1H), 7.62 (bt, *J* = 5.8 Hz, 1H), 4.61 (bd, *J* = 1.9 Hz, 1H), 4.12 (q, *J* = 7.1 Hz, 2H), 3.99 – 3.94 (m, 4H), 3.57 – 3.44 (m, 2H), 2.23 – 2.09 (m, 1H), 2.06 – 1.97 (m, 2H), 1.96 – 1.78 (m, 2H), 1.22 (t, *J* = 7.0 Hz, 3H)."

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Replace ^{1}H NMR data for compound **(7)** with:

"^{1}H NMR (400 MHz, MeOD) δ 9.17 – 9.10 (m, 1H), 8.56 (d, *J* = 8.5 Hz, 1H), 8.20 (d, *J* = 8.5 Hz, 1H), 8.06 – 8.00 (m, 1H), 7.97 – 7.92 (m, 1H), 7.90 – 7.84 (m, 1H), 4.01 (d, *J* = 1.7 Hz, 1H), 3.97 (s, 2H), 3.95 (s, 2H), 3.77 – 3.56 (m, 2H), 2.36 – 2.24 (m, 1H), 2.23 – 2.11 (m, 2H), 2.09 – 1.85 (m, 2H)."

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Replace ^{1}H NMR data for compound **(9)** with:

"^{1}H NMR (400 MHz, $CDCl_3$) δ 7.38 – 7.30 (m, 5H), 5.29 – 5.21 (m, 1H), 5.10 (s, 2H), 4.39 – 4.26 (m, 1H), 3.71 (s, 3H), 2.53 – 2.34 (m, 2H), 2.24 – 2.12 (m, 1H), 2.01 – 1.87 (m, 1H), 1.41 (s, 9H). ^{1}H NMR spectrum corresponds with published spectral information[1]."

Replace ^{1}H NMR data for compound **(10)** with:

"^{1}H NMR (400 MHz, $CDCl_3$) δ 8.83 (bs, 1H), 5.16 (d, *J* = 8.4 Hz, 1H), 4.43 – 4.31 (m, 1H), 3.75 (s, 3H), 2.58 – 2.37 (m, 2H), 2.25 – 2.13 (m, 1H), 2.02 – 1.88 (m, 1H), 1.44 (s, 9H). ^{1}H NMR spectrum corresponds with published spectral information[2]."

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Replace ^{1}H NMR data for compound **(11)** with:

"^{1}H NMR (400 MHz, $CDCl_3$) δ 7.38 – 7.21 (m, 5H), 6.68 (bs, 1H), 5.37 (d, *J* = 8.0 Hz, 1H), 4.43 (d, *J* = 5.6 Hz, 2H), 4.31 – 4.22 (m, 1H), 3.72 (s, 3H), 2.33 (t, *J* = 7.1 Hz, 2H), 2.25 – 2.12 (m, 1H), 2.04 – 1.85 (m, 1H), 1.42 (s, 9H)."

Replace ^{1}H NMR data for compound **(12)** with:

"^{1}H NMR (400 MHz, $CDCl_3$) δ 8.68 (bs, 3H), 7.30 (bs, 1H), 7.28 – 7.12 (m, 5H), 4.28 (d, *J* = 5.3 Hz, 2H), 4.08 – 4.01 (m, 1H), 3.67 (s, 3H), 2.46 (t, *J* = 6.8 Hz, 2H), 2.33 – 2.22 (m, 1H), 2.21 – 2.10 (m, 1H)."

Replace ^{1}H NMR data for compound **(13)** with:

"^{1}H NMR (400 MHz, $CDCl_3$) δ 8.32 (bs, 3H), 7.39 – 7.29 (m, 5H), 5.11 (s, 2H), 4.28 – 4.20 (m, 1H), 3.78 (s, 3H), 2.66 (t, *J* = 6.3 Hz, 2H), 2.40 – 2.20 (m, 2H). ^{1}H NMR spectrum corresponds with published spectral information[3]."

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Replace ^{1}H NMR data for compound **(14)** with:

"^{1}H NMR (400 MHz, D_2O) δ 4.19 (dd, *J* = 7.5, 6.3 Hz, 1H), 3.83 (s, 3H), 2.63 (td, *J* = 7.1, 1.1 Hz, 2H), 2.34 – 2.13 (m, 2H)."

Replace ^{1}H NMR data for compound **(16)** with:

"^{1}H NMR (400 MHz, $CDCl_3$) δ 7.40 – 7.30 (m, 5H), 5.48 (d, *J* = 8.7 Hz, 1H), 5.13 (s, 1H), 5.12 (s, 1H), 4.62 – 4.56 (m, 1H), 3.69 (s, 3H), 3.10 – 2.81 (m, 2H), 1.44 (s, 9H). ^{1}H NMR spectrum corresponds with published spectral information[3]."

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Replace ^{1}H NMR data for compound **(17)** with:

"^{1}H NMR (400 MHz, $CDCl_3$) δ 8.17 (bs, 3H), 7.40 – 7.29 (m, 5H), 5.16 (s, 2H), 4.41 (t, *J* = 5.1 Hz, 1H), 3.77 (s, 3H), 3.19 (d, *J* = 5.1 Hz, 2H). ^{1}H NMR spectrum corresponds with published spectral information[3]."

Replace ^{1}H NMR data for compound **(19)** with:

"^{1}H NMR (400 MHz, D_2O) δ 3.79 (s, 3H), 3.61 (t, *J* = 6.5 Hz, 1H), 2.45 – 2.35 (m, 2H), 2.11 – 1.89 (m, 2H). ^{1}H NMR spectrum corresponds with published spectral information[4]."

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Delete the protocol for compound **(20a**)

Delete the protocol for compound **(20b**)

Page 55

Delete the protocol for compound **(20c**)

Delete the protocol for compound **(20d**)

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Delete the protocol for compound **(20e**)

Replace the procedure for compound **(21a)** with:

"36 mg (47 %) of α-hydroxyamide **20a** were prepared from 50 mg of carboxylic acid **7** by General procedure 1 (gradient 0 → 50 % acetonitrile) as a light brown amorphous solid (**UPLC/MS** – R_t = 3.276 min, ESI+ $[M+H]^+$ = 647.398). 36 mg of compound **20a** were then used without further characterization for the preparation of compound **21a** by General procedure 2 (HPLC gradient 0 → 50 % acetonitrile). 9 mg (isol. yield 25 %) of compound **21a** were prepared as a light brown amorphous solid."

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Replace the procedure for compound **(21b)** with:

"59 mg (76 %) of α-hydroxyamide **20b** were prepared from 50 mg of carboxylic acid **7** by General procedure 1 (gradient 0 → 60 % acetonitrile) as a light brown amorphous solid (**UPLC/MS** – R_{t1} = 3.585 min, R_{t2} = 3.627 min, ESI+ $[M+H]^+$ = 648.380). 38 mg of compound **20b** were then used without further characterization for the preparation of compound **21b** by General procedure 2 (HPLC gradient 0 → 50 % acetonitrile). 19 mg (isol. yield 50 %) of compound **21b** were prepared as a light brown amorphous solid."

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Replace the procedure for compound **(21c)** with:

"32 mg (53 %) of α-hydroxyamide **20c** were prepared from 45 mg of carboxylic acid **7** by General procedure 1 (gradient 0 → 50 % acetonitrile) as a light brown amorphous solid (**UPLC/MS** – R_{t1} = 2.748 min, R_{t2} = 2.789 min, ESI+ $[M+H]^+$ = 558.356). 32 mg of compound **20c** were then used without further characterization for the preparation of compound **21c** by General procedure 2 (HPLC gradient 0 → 50 % acetonitrile). 20 mg (isol. yield 63 %) of compound **21c** were prepared as a light brown amorphous solid."

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Replace the procedure for compound **(21d)** with:

"28 mg (41 %) of α-hydroxyamide **20d** were prepared from 45 mg of carboxylic acid **7** by General procedure 1 (gradient 0 → 60 % acetonitrile) as a light brown amorphous solid (**UPLC/MS** – R_{t1} = 3.417 min, R_{t2} = 3.463 min, ESI+ $[M+H]^+$ = 634.423). 28 mg of compound **20d** were then used without further characterization for the preparation of compound **21d** by General procedure 2 (HPLC gradient 0 → 50 % acetonitrile). 15 mg (isol. yield 65 %) of compound **21d** were prepared as a light brown amorphous solid."

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Replace the procedure for compound **(21e)** with:

"49 mg (54 %) of α-hydroxyamide **20e** were prepared from 67 mg of carboxylic acid **7** by General procedure 1 (gradient 0 → 40 % acetonitrile) as a light brown amorphous solid (**UPLC/MS** – R_{t1} = 2.598 min, R_{t2} = 2.643 min, ESI+ $[M+H]^+$ = 557.325). 49 mg of compound **20e** were then used without further characterization for the preparation of compound **21e** by General procedure 2 (HPLC gradient 0 → 50 % acetonitrile). 10 mg (isol. yield 20 %) of compound **21e** were prepared as a light brown amorphous solid."

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Replace ^{1}H NMR data for compound **(23)** with:

"^{1}H NMR (400 MHz, $CDCl_3$) δ 4.24 – 4.04 (m, 1H), 3.90 – 3.56 (m, 4H), 3.40 (bs, 1H), 2.57 – 2.39 (m, 1H), 2.23 – 2.02 (m, 1H), 1.47 (s, 9H). ^{1}H NMR spectrum corresponds with published spectral information[5]."

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Replace ^{1}H NMR data for compound **(24)** with:

"^{1}H NMR (400 MHz, $CDCl_3$) δ 9.57 (d, J = 24.5 Hz, 1H), 4.51 – 4.22 (m, 1H), 3.97 – 3.69 (m, 2H), 2.70 – 2.37 (m, 2H), 1.51 – 1.43 (m, 9H). ^{1}H NMR spectrum corresponds with published spectral information[6]."

Replace ^{1}H NMR data for compound **(26)** with:

"^{1}H NMR (400 MHz, $CDCl_3$) δ 8.18 (bt, J = 1.8 Hz, 1H), 7.36 – 7.22 (m, 5H), 6.83 – 6.69 (m, 3H), 5.80 – 5.73 (m, 1H), 5.06 (d, J = 1.7 Hz, 2H), 5.05 (d, J = 2.0 Hz, 2H), 4.99 (bs, 1H), 4.66 – 4.44 (m, 1H), 4.36 (d, J = 5.9 Hz, 1H), 4.43 – 4.16 (m, 2H), 3.82 (s, 3H), 3.81 (s, 3H), 3.79 (d, J = 3.6 Hz, 2H), 2.81 – 2.34 (m, 2H)."

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Replace ^{1}H NMR data for compound **(27)** with:

"^{1}H NMR (400 MHz, $CDCl_3$) δ 8.23 (bs, 3H), 6.86 – 6.65 (m, 3H), 6.05 (bs, 1H), 6.01 (bs, 1H), 4.74 – 4.45 (m, 1H), 4.40 (d, J = 5.8 Hz, 1H), 4.32 (d, J = 6.2 Hz, 2H), 4.28 – 4.00 (m, 2H), 3.85 (s, 3H), 3.80 (d, J = 5.4 Hz, 2H), 3.77 (s, 3H), 2.80 – 2.19 (m, 2H)."

Delete the protocol for compound **(28**)

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Replace the procedure for compound **(29)** with:

"15 mg (39 %) of α-hydroxyamide **28** were prepared from 35 mg of compound **27** TFA salt by General procedure 1 (gradient 0 → 45 % acetonitrile) as a light brown amorphous solid (**UPLC/MS** – R_{t1} = 3.280 min, R_{t2} = 3.377 min, ESI+ $[M+H]^+$ = 543.276). 15 mg of compound **28** were then used without further characterization for the preparation of compound **29** by General procedure 2 (HPLC gradient 0 → 40 % acetonitrile). 11 mg (isol. yield 73 %) of compound **29** were prepared as a light brown amorphous solid."

Reference

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2. N. Ieda, K. Itoh, Y. Inoue, Y. Izumiya, M. Kawaguchi, N. Miyata and H. Nakagawa, *Bioorg. Med. Chem. Lett.*, **2019**, 29, 353–356.
3. P.-L. Boudreault and N. Voyer, *Org. Biomol. Chem.*, **2006**, 5, 1459–1465.
4. R. Castonguay, C. Lherbet and J. W. Keillor, *Bioorg. Med. Chem.*, **2002**, 10, 4185–4191.
5. P. Limpachayaporn, B. Riemann, K. Kopka, O. Schober, M. Schäfers and G. Haufe, *Eur. J. Med. Chem.*, **2013**, 64, 562–578.
6. United States Patent and Trademark Office, US201101055201A1, **2011**.