Supplementary Table S1. Key inclusion and exclusion criteria for DIALOGUEs 1, 2, and 4

DIALOGUE 1	DIALOGUE 2	DIALOGUE 4
Inclusion criteria		
• Diagnosis of anemia associated with CKD • Men and women ≥18 years of age • Serum ferritin levels ≥100 µg/L and <1,000 µg/L or TSAT ≥20% • Folate and vitamin B_{12} values above the lower limit of normal		
• eGFR <60 mL/min/1.73 m^2 • Not undergoing dialysis or expected to begin dialysis during the study (≥16 weeks after randomization)		• Undergoing dialysis, defined as regular long-term hemodialysis with the same modality of dialysis for ≥3 months preceding randomization
• Not treated with ESA in the 8 weeks before randomization (ESA-naïve)	• Treated with darbepoetin with no dose changes in the 8 weeks before randomization	• Treated with epoetin with no dose changes in the 8 weeks before randomization
	• At least one kidney	
• Mean Hb level ≤10.5 g/dL	• Mean Hb level 9.0–12.0 g/dL	• Mean Hb level 9.0–11.5 g/dL
Exclusion criteria		
• Significant acute or chronic bleeding • Hereditary hemoglobinopathies • Aplastic anemia • Chronic inflammatory disease that could impact erythropoiesis • History of cardiovascular or cerebrovascular events in previous 6 months • Poorly controlled hypertension or hypotension • Severe heart rhythm or conduction disturbances • Congestive heart failure (New York Heart Association class III or IV) • Severe hepatic insufficiency • Treatment with immuno- or myelosuppressant therapy within the 8 weeks before randomization (DIALOGUEs 1 and 4) or immunosuppressant therapy during the 7 days before randomization (DIALOGUE 2) • Use of UGT1A1 inhibitors during the 7 days before randomization		

CKD, chronic kidney disease; DIALOGUE, Daily orAL treatment increasing endOGenoUs Erythropoietin; eGFR, estimated glomerular filtration rate; ESA, erythropoiesis-stimulating agents; Hb, hemoglobin; TSAT, total iron binding capacity; UGT1A1, UDP glucuronosyltransferase 1 family, polypeptide A1.

Supplementary Table S2. Change in iron parameters and Hb over the 16 weeks of treatment in DIALOGUE 1

Parameter	**Molidustat**		**Placebo**	
	Overall	**Non-iron users**	**Overall**	**Non-iron users**
	Change from baseline to week 17 (mean ± SD)	Change from baseline to week 17 (mean ± SD)	Change from baseline to week 17 (mean ± SD)	Change from baseline to week 17 (mean ± SD)
Hb, g/dL	1.5 ± 1.2	1.3 ± 1.2	0.3 ± 1.0	0.4 ± 1.1
(*n*)	(43)	(22)	(18)	(6)
Hepcidin, ng/mL	–18.8 ± 35.2	–26.8 ± 39.2	2.9 ± 29.9	–2.6 ± 11.0
(*n*)	(40)	(22)	(18)	(6)
Ferritin, μg/L	–87.0 ± 121.3	–123.7 ± 140.4	1.7 ± 123.6	–23.7 ± 148.9
(*n*)	(40)	(22)	(18)	(6)
Iron, μg/dL	–10.1 ± 33.9	–16.7 ± 30.9	–14.0 ± 40.0	–35.9 ± 35.6
(*n*)	(40)	(22)	(18)	(6)
TSAT, %	–5.0 ± 11.7	–8.0 ± 10.9	–4.7 ± 13.7	–8.2 ± 4.5
(*n*)	(40)	(22)	(18)	(5)
TIBC, μmol/L	2.4 ± 7.4	3.8 ± 8.0	–1.2 ± 5.1	–1.7 ± 5.6
(*n*)	(40)	(22)	(18)	(5)

Note: data are mean ± SD.
DIALOGUE, DaIly orAL treatment increasing endOGenoUs Erythropoietin; Hb, hemoglobin; SD, standard deviation; TIBC, total iron binding capacity; TSAT, transferrin saturation.

Supplementary Table S3. Change in iron parameters and Hb over the 16 weeks of treatment in DIALOGUE 2

Parameters	**Molidustat**		**Darbepoetin**	
	Overall	**Non-iron users**	**Overall**	**Non-iron users**
	Change from baseline to week 17 (mean ± SD)	Change from baseline to week 17 (mean ± SD)	Change from baseline to week 17 (mean ± SD)	Change from baseline to week 17 (mean ± SD)
Hb, g/dL	0.3 ± 1.0	0.33 ± 0.9	0.1 ± 0.9	0.1 ± 1.2
(*n*)	(75)	(32)	(27)	(12)
Hepcidin, ng/mL	–10.4 ± 28.0	–15.3 ± 29.1	13.6 ± 28.2	13.0 ± 29.2
(*n*)	(72)	(29)	(27)	(12)
Ferritin, μg/L	–21.8 ± 122.2	–70.8 ± 88.0	–15.4 ± 105.5	–25.0 ± 128.6
(*n*)	(70)	(30)	(27)	(12)
Iron, μg/dL	–9.7 ± 53.7	–16.3 ± 71.6	5.2 ± 28.9	6.6 ± 38.5
(*n*)	(70)	(30)	(27)	(12)
TSAT, %	–1.6 ± 13.8	–2.6 ± 16.4	1.9 ± 10.6	2.1 ± 12.3
(*n*)	(70)	(29)	(27)	(11)
TIBC, μmol/L	0.0 ± 7.1	1.3 ± 7.2	–0.4 ± 5.6	–1.0 ± 7.7
(*n*)	(70)	(30)	(27)	(11)

Note: data are mean ± SD.
DIALOGUE, DaIly orAL treatment increasing endOGenoUs Erythropoietin; Hb, hemoglobin; SD, standard deviation; TIBC, total iron binding capacity; TSAT, transferrin saturation.

Supplementary Table S4. Change in iron parameters and Hb over the 16 weeks of treatment in DIALOGUE 4

Parameter	Molidustat		Epoetin	
	Overall	**Non-iron users**	**Overall**	**Non-iron users**
	Change from baseline to week 17 (mean ± SD)	Change from baseline to week 17 (mean ± SD)	Change from baseline to week 17 (mean ± SD)	Change from baseline to week 17 (mean ± SD)
Hb, g/dL	–0.6 ± 1.5	–0.1 ± 1.3	–0.3 ± 1.0	–0.3 ± 0.9
(*n*)	(105)	(39)	(39)	(13)
Hepcidin, ng/mL	–0.2 ± 40.7	–14.3 ± 34.7	6.4 ± 38.6	7.0 ± 34.4
(*n*)	(156)	(39)	(38)	(13)
Ferritin, μg/L	28.7 ± 227.8	–63.9 ± 181.3	57.5 ± 253.8	–17.7 ± 167.7
(*n*)	(157)	(38)	(39)	(13)
Iron, μg/dL	2.7 ± 24.2	1.2 ± 24.8	6.7 ± 26.2	14.2 ± 20.4
(*n*)	(157)	(38)	(39)	(13)
TSAT, %	–0.1 ± 13.3	–2.5 ± 13.7	0.5 ± 12.9	2.9 ± 11.8
(*n*)	(157)	(38)	(38)	(13)
TIBC, μmol/L	3.9 ± 16.4	7.7 ± 25.7	1.8 ± 10.1	2.8 ± 6.5
(*n*)	(157)	(38)	(39)	(13)

Note: data are mean ± SD.
DIALOGUE, DaIly orAL treatment increasing endOGenoUs Erythropoietin; Hb, hemoglobin; SD, standard deviation; TIBC, total iron binding capacity; TSAT, transferrin saturation.