Supplementary Table S1 Changes in concentrations of creatine and related metabolites in tissues of hybrid striped bass fed a soybean meal (58%)-based diet supplemented with 0, 1, or 2% glycine

Variable	Tissue or plasma	Response to dietary supplementation with 0%, 1%, and 2% glycine
		Phase-I (5 to 40 g) hybrid striped bass
Creatine	Skeletal muscle	↑ (1% or 2% glycine vs 0% glycine); "—" between 1% and 2% glycine groups
	Liver	↑ (1% or 2% glycine vs 0% glycine); "—" between 1% and 2% glycine groups
	Kidney	↑ (in a dose-dependent manner)
	Proximal intestine	"—" among the three groups of fish
	Plasma	↑ (1% or 2% glycine vs 0% glycine); "—" between 1% and 2% glycine groups
Phosphocreatine	Skeletal muscle	↑ (1% or 2% glycine vs 0% glycine); "—" between 1% and 2% glycine groups
	Liver	"—" among the three groups of fish
	Kidney	"—" among the three groups of fish
	Proximal intestine	"—" among the three groups of fish
	Plasma	Phosphocreatine was not detected.
Guanidinoacetate	Skeletal muscle	↑ (in a dose-dependent manner)
	Liver	↑ (2% glycine vs 0% glycine); "—" between 1% and 0 or 2% glycine groups
	Kidney	↑ (in a dose-dependent manner)
	Proximal intestine	↑ (2% glycine vs 0% glycine); "—" between 1% and 0 or 2% glycine groups
	Plasma	↑ (in a dose-dependent manner)
Creatinine	All tissues studied	"—" among the three groups of fish
		Phase-II (110 to 240 g) hybrid striped bass
Creatine	Skeletal muscle	↑ (in a dose-dependent manner)
	Liver	"—" among the three groups of fish
	Head kidney	"—" among the three groups of fish
	Tail kidney	"—" among the three groups of fish
	Pancreas	↑ (in a dose-dependent manner)
	Proximal intestine	"—" among the three groups of fish
	Plasma	↑ (1% or 2% glycine vs 0% glycine); "—" between 1% and 2% glycine groups
Phosphocreatine	Skeletal muscle	↑ (in a dose-dependent manner)
	Liver	"—" among the three groups of fish
	Head kidney	"—" among the three groups of fish
	Tail kidney	↑ (1% or 2% glycine vs 0% glycine); "—" between 1% and 2% glycine groups
	Pancreas	↑ (in a dose-dependent manner)
	Proximal intestine	"—" among the three groups of fish
	Plasma	Phosphocreatine was not detected.
Guanidinoacetate	Skeletal muscle	"—" among the three groups of fish
	Liver	Guanidinoacetate was not detected.
	Head kidney	Guanidinoacetate was not detected.
	Tail kidney	"—" among the three groups of fish
	Pancreas	↑ (2% glycine vs 0% glycine); "—" between 1% and 0 or 2% glycine groups
	Proximal intestine	"—" among the three groups of fish
	Plasma	↑ (in a dose-dependent manner)
Creatinine	All tissues studied	"—" among the three groups of fish

↑, Increase; "—", no change.

Supplementary Table S2 Changes in concentrations of glutathione (GSH) and glutathione disulfide (GSSG) in tissues of hybrid striped bass fed a soybean meal (58%)-based diet supplemented with 0, 1, or 2% glycine

Variable	Tissue or plasma	Response to dietary supplementation with 0%, 1%, and 2% glycine
		Phase-I (5 to 40 g) hybrid striped bass
GSH	Skeletal muscle	"—" among the three groups of fish
	Liver	↑ (1% or 2% glycine vs 0% glycine); "—" between 1% and 2% glycine groups
	Kidney	"—" among the three groups of fish
	Proximal intestine	↑ (in a dose-dependent manner)
GSSG	Skeletal muscle	↓ (1% or 2% glycine vs 0% glycine); "—" between 1% and 2% glycine groups
	Liver	"—" among the three groups of fish
	Kidney	↓ (1% or 2% glycine vs 0% glycine); "—" between 1% and 2% glycine groups
	Proximal intestine	↑ (in a dose-dependent manner)
GSSG/GSH (mol/mol)	Skeletal muscle	↓ (1% or 2% glycine vs 0% glycine); "—" between 1% and 2% glycine groups
	Liver	↓ (1% or 2% glycine vs 0% glycine); "—" between 1% and 2% glycine groups
	Kidney	↓ (1% or 2% glycine vs 0% glycine); "—" between 1% and 2% glycine groups
	Proximal intestine	↓ (1% or 2% glycine vs 0% glycine); "—" between 1% and 2% glycine groups
Total glutathione[1]	Skeletal muscle	"—" among the three groups of fish
	Liver	↑ (1% or 2% glycine vs 0% glycine); "—" between 1% and 2% glycine groups
	Kidney	"—" among the three groups of fish
	Proximal intestine	↑ (in a dose-dependent manner)
		Phase-II (110 to 240 g) hybrid striped bass
GSH	Skeletal muscle	"—" among the three groups of fish
	Liver	↑ (in a dose-dependent manner)
	Head kidney	"—" among the three groups of fish
	Tail kidney	"—" among the three groups of fish
	Pancreas	"—" among the three groups of fish
	Proximal intestine	↑ (in a dose-dependent manner)
GSSG	Skeletal muscle	"—" among the three groups of fish
	Liver	"—" among the three groups of fish
	Head kidney	"—" among the three groups of fish
	Tail kidney	"—" among the three groups of fish
	Pancreas	"—" among the three groups of fish
	Proximal intestine	"—" among the three groups of fish
GSSG/GSH (mol/mol)	Skeletal muscle	↓ (1% or 2% glycine vs 0% glycine); "—" between 1% and 2% glycine groups
	Liver	↓ (1% or 2% glycine vs 0% glycine); "—" between 1% and 2% glycine groups
	Head kidney	↓ (1% or 2% glycine vs 0% glycine); "—" between 1% and 2% glycine groups
	Tail kidney	↓ (1% or 2% glycine vs 0% glycine); "—" between 1% and 2% glycine groups
	Pancreas	"—" among the three groups of fish
	Proximal intestine	↓ (1% or 2% glycine vs 0% glycine); "—" between 1% and 2% glycine groups
Total glutathione[1]	Skeletal muscle	"—" among the three groups of fish
	Liver	↑ (in a dose-dependent manner)
	Head kidney	"—" among the three groups of fish
	Tail kidney	"—" among the three groups of fish
	Pancreas	"—" among the three groups of fish
	Proximal intestine	↑ (in a dose-dependent manner)

↑, Increase; ↓, Decrease; "—", no change.
1 Glutathione + ½ glutathione disulfide.

Supplementary Table S3 Changes in activities of creatine-synthetic enzymes in tissues of hybrid striped bass fed a soybean meal (58%)-based diet supplemented with 0, 1, or 2% glycine

Variable	Tissue or plasma	Response to dietary supplementation with 0%, 1%, and 2% glycine
		Phase-I (5 to 40 g) hybrid striped bass
AGAT	Skeletal muscle	↑ (in a dose-dependent manner)
	Liver	"—" among the three groups of fish
	Kidney	↑ (in a dose-dependent manner)
	Proximal intestine	"—" among the three groups of fish
GAMT	Skeletal muscle	↑ (1% or 2% glycine vs 0% glycine); "—" between 1% and 2% glycine groups
	Liver	↑ (2% glycine vs 0% glycine); "—" between 1% and 0 or 2% glycine groups
	Kidney	"—" among the three groups of fish
	Proximal intestine	"—" among the three groups of fish
		Phase-II (110 to 240 g) hybrid striped bass
AGAT	Skeletal muscle	↑ (in a dose-dependent manner)
	Liver	"—" among the three groups of fish
	Head kidney	"—" among the three groups of fish
	Tail kidney	↑ (in a dose-dependent manner)
	Pancreas	↑ (1% or 2% glycine vs 0% glycine); "—" between 1% and 2% glycine groups
	Proximal intestine	"—" among the three groups of fish
GAMT	Skeletal muscle	↑ (1% or 2% glycine vs 0% glycine); "—" between 1% and 2% glycine groups
	Liver	↑ (2% glycine vs 0% glycine); "—" between 1% and 0 or 2% glycine groups
	Head kidney	Enzymatic activity was not detected.
	Tail kidney	"—" among the three groups of fish
	Pancreas	"—" among the three groups of fish
	Proximal intestine	Enzymatic activity was not detected.

↑, Increase; "—", no change.
AGAT, arginine:glycine amidinotransferase; GAMT, guanidinoacetate methyltransferase.

Supplementary Table S4 Changes in activities of glutathione-forming enzymes in tissues of hybrid striped bass fed a soybean meal (58%)-based diet supplemented with 0, 1, or 2% glycine

Variable	Tissue or plasma	Response to dietary supplementation with 0%, 1%, and 2% glycine
		Phase-I (5 to 40 g) hybrid striped bass
GCS	Skeletal muscle	"—" among the three groups of fish
	Liver	↑ (in a dose-dependent manner)
	Kidney	"—" among the three groups of fish
	Proximal intestine	↑ (1% or 2% glycine vs 0% glycine); "—" between 1% and 2% glycine groups
Glutathione synthetase	Skeletal muscle	"—" among the three groups of fish
	Liver	↑ (in a dose-dependent manner)
	Kidney	"—" among the three groups of fish
	Proximal intestine	↑ (1% or 2% glycine vs 0% glycine); "—" between 1% and 2% glycine groups
Glutathione reductase	Skeletal muscle	↑ (1% or 2% glycine vs 0% glycine); "—" between 1% and 2% glycine groups
	Liver	↑ (2% glycine vs 0% or 1% glycine); "—" between 1% and 0% glycine groups
	Kidney	↑ (1% or 2% glycine vs 0% glycine); "—" between 1% and 2% glycine groups
	Proximal intestine	↑ (1% or 2% glycine vs 0% glycine); "—" between 1% and 2% glycine groups
		Phase-II (110 to 240 g) hybrid striped bass
GCS	Skeletal muscle	"—" among the three groups of fish
	Liver	↑ (in a dose-dependent manner)
	Head kidney	"—" among the three groups of fish
	Tail kidney	"—" among the three groups of fish
	Pancreas	"—" among the three groups of fish
	Proximal intestine	↑ (1% or 2% glycine vs 0% glycine); "—" between 1% and 2% glycine groups
Glutathione synthetase	Skeletal muscle	"—" among the three groups of fish
	Liver	↑ (1% or 2% glycine vs 0% glycine); "—" between 1% and 2% glycine groups
	Head kidney	"—" among the three groups of fish
	Tail kidney	"—" among the three groups of fish
	Pancreas	"—" among the three groups of fish
	Proximal intestine	↑ (in a dose-dependent manner)
Glutathione reductase	Skeletal muscle	↑ (1% or 2% glycine vs 0% glycine); "—" between 1% and 2% glycine groups
	Liver	↑ (2% glycine vs 0% or 1% glycine); "—" between 1% and 0% glycine groups
	Head kidney	↑ (1% or 2% glycine vs 0% glycine); "—" between 1% and 2% glycine groups
	Tail kidney	↑ (1% or 2% glycine vs 0% glycine); "—" between 1% and 2% glycine groups
	Pancreas	"—" among the three groups of fish
	Proximal intestine	↑ (1% or 2% glycine vs 0% glycine); "—" between 1% and 2% glycine groups

↑, Increase; "—", no change.
GCS, γ-glutamylcysteine synthetase.